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the ultimate BMW magazine



## 3.0 CSL 'Homage'

Stunning retro-themed design study unveiled at Concorso d'Eleganza

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# New X1 revealed

Stylish next generation soft-roader is roomier, faster and more economical



## Plus

- Face-lifted 1 Series range driven
- Hybrid i8 re-evaluated on UK roads
- M6 GT3 and M6 Competition pack
- What's in your Garage? E3 3.0Si
- 10 Minute Guide: E88 125i Convertible
- BMW's V-configuration engines

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I'm not sure if I can remember a month quite as busy as this! We've been across Germany to visit AC Schnitzer and Manhart Performance, I took the old M635CSi for a quick blat to the Nürburgring for the 24-Hour race, we've attended various new model launches and BMW has given us a veritable deluge of new models, too.

As you'll have seen, our cover star is the new X1 and I have to say that I reckon it'll be a real winner. Obviously one has to reserve judgement on the styling until it's been seen out in the open but to my eyes it's more pleasing than the previous generation car, looking like a more cohesive design. Purists may scoff as it's based on the 2 Series Active Tourer and as a result will be available in a front-wheel drive sDrive guise but using this platform results in a transverse engine layout which brings huge packaging benefits. BMW reckons that there's significantly more legroom for rear seat passengers and the boot has grown by a whopping 85 litres – and all in a package that's actually shorter than the original car. The X1 isn't a BMW that you'd expect to fling around a circuit in a perfect power-slide so to my mind it really doesn't matter which wheels are driven providing it still retains that entertaining BMW feel.

While we were at the 'Ring for the 24-Hour race we spoke to BMW M's Chairman (see *News*, page 16) about four-wheel drive and whether or not it will be utilised on more M cars. Die-hard fans will be pleased to hear he's not keen on the term four-wheel drive. He does admit that the current machines that are pushing 600hp are at the limit of what's possible with rear-wheel drive but as far as M is concerned if it does resort to four driven wheels it will very much be with a rear-wheel drive bias with just some 'added traction' coming from the front wheels.

There were no front- or four-wheel drive concerns with the 3.0 CSL Hommage concept that BMW unleashed at the Concorso d'Eleganza but if the reaction in the office is anything to go by not everyone is keen on the front end styling of BMW's homage to the original Batmobile. I was going to use a front three-quarter angle picture of it below but in the end I decided wouldn't as I didn't want to frighten any young children who might pick up a copy. For a show car that looks simply stunning from some angles I just can't understand why BMW's designers felt the need to endow the car with a pair of chromed rabbit's teeth for kidney grilles! Is that just me? Let us know your thoughts via the usual channels please – I'd be fascinated to hear what everyone else thinks of the car.

Bob Harper, Editor



# BMWcar

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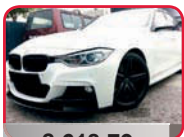
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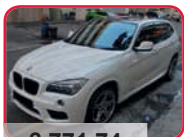
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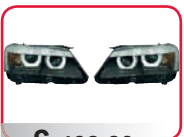
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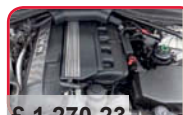
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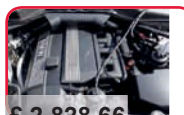
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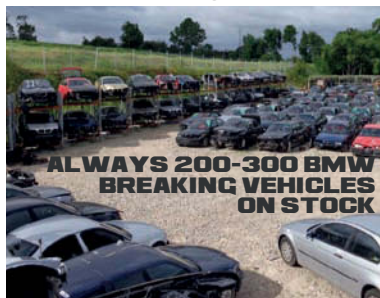
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# Next Generation X1 revealed

Offering sleeker looks, new engines and improved efficiency as well as the promise of enhanced refinement along with increased cabin space, the new X1 looks to be a sure-fire winner!

The burgeoning onslaught of new BMW models shows no sign of abating with the reveal of the second generation X1 a scant six years since the original was unveiled back early in the summer of 2009. In that time the X1 has been a huge success for BMW, selling very nearly three quarters of a million examples worldwide (with 40,000 of those in the UK), and with the new model BMW is aiming to capitalise on, and eclipse, those sales figures. As ever BMW reckons its new baby is better in every respect than its predecessor with improved interior space, better performance and increased efficiency.

The new X1 is a departure for a small- to medium-sized X-generation BMW in that it's not based on the 3 Series chassis which has been the case with the original X1 and both generations of X3. In a fairly major departure for BMW the new X1 is actually based on the front-wheel drive 2 Series Active Tourer and shares that model's wheelbase and front and rear track dimensions as well as its transverse engine installation. The X1 will exclusively use a range of four-cylinder engines in both petrol and diesel guises and while there's been no announcement yet, you could probably bet your bottom dollar that some form of hybrid will be on offer in the coming years, too.

We won't get carried away with describing the car's exterior looks as you can judge how it looks for yourselves, but it appears to be quite a skilful blend of typical BMW X DNA with some of the design cues from the Active Tourer. In terms of exterior dimensions the new X1's largest gain is in height – it's 53mm taller than the current car – but at 1821mm wide it's only 23mm wider than the E84 generation machine. Perhaps most surprisingly, the new X1 is 15mm shorter than the outgoing model but, despite this, the packaging benefits brought about by its transverse engine layout mean that BMW reckon it offers more interior



## The interior generally seems to exude a feeling of quality which is definitely a step in the right direction

accommodation and more luggage space, too.

Four different engines will be offered to UK buyers – one petrol, the xDrive20i – and three diesels in 18d, 20d and 25d guises. In other markets an xDrive25i will also be offered and it's likely that after the initial launch process, further models will also be introduced, such as an EfficientDynamics model which has proved popular with company car drivers. The xDrive 20i is powered by the new 192hp turbocharged four-cylinder unit which generates 207lb ft of torque at just 1250rpm. The engine will be mated in the UK market to the eight-speed automatic transmission as a standard fitment and performance and economy look to be pretty decent with the 0-62mph dash taking just 7.4 seconds while economy and emissions are officially rated at 44.8mpg and 146g/km respectively.

The three diesel engines on offer are from BMW's new 'B' series of units that feature common rail direct injection with solenoid valve injectors and if our experience with these units in other new models is anything to go by they will be significantly more refined than the ones fitted to the current car. Top dog in the UK line-up will be the xDrive25d offering 231hp and 332lb ft of torque, which will equate to a 6.6 second 0-62mph time with 56.5mpg and CO<sub>2</sub>

emissions of 132g/km. It will be equipped with the eight-speed automatic 'box as standard. The xDrive20d uses the now familiar 190hp version of the B47 unit with 295lb ft of torque available from 1750rpm. It offers an excellent blend of performance and economy with 0-62mph taking 7.6 seconds while posting combined figures of 57.6mpg and 128g/km. These figures are for the eight-speed auto with which the car will be launched but a six-speed manual version will be introduced later in the year.

The baby of the range for the UK's diesel line-up will be the sDrive18d and, in a first for a BMW X machine, this one will feature front-wheel drive. Power and torque are rated at 150hp and 243lb ft respectively and with its standard six-speed manual 'box it will return figures of 9.2 seconds for the 0-62mph sprint and economy and emissions of an impressive 68.9mpg and 109g/km. An xDrive version of the 18d will also be launched later in the year.

Under the new X1's skin as well as the new engines you'll find an updated xDrive system as utilised on the 2 Series Active Tourer. The system consists of a single-speed bevel gear in the front-axle drive unit (a power take-off), and a rear-axle drive unit with an electro-hydraulically controlled hang-on multi-plate clutch. The DSC system keeps the control

unit constantly supplied with important data for analysing the driving situation, including the car's speed, lateral and longitudinal acceleration, steering lock, wheel speed, pitch, accelerator position and the Driving Experience Control and DSC settings.

As you'd expect the new X1's chassis setup has been altered from the previous generation machine to take into account the car's front-wheel drive origins and, as a result, it now comprises single-joint strut suspension at the front and a multi-link rear axle. Aluminium swivel bearings, as well as axle carriers and control arms made from high-strength steel, help to reduce weight and increase the rigidity of the front axle, and the rear axle also employs a high proportion of high-strength steels. Tube-shaped anti-roll bars at the front and rear axle, innovative axle mounting and specially tuned elastokinematics contribute to agility and ride comfort, as do the connection of the dampers to the body via sophisticated three-way support mounts. As the original X1's ride quality was perhaps its only major failing it will be particularly interesting to see the gains BMW has made in this area once we come to sample the car. For the first time on the X1 the adjustable dampers will also make an appearance as an option while the M Sport model will feature a firmer spring and damper setup



Both interior space and luggage carrying capacity are said to be improved in the new X1 despite the exterior dimensions being virtually identical to the old model. Styling is improved with a more cohesive look than the outgoing machine



### New X1: UK launch models

	xDrive20i	sDrive18d	xDrive20d	xDrive25d
<b>ENGINE:</b>	Four-cylinder, 16-valve	Four-cylinder, 16-valve	Four-cylinder, 16-valve	Four-cylinder, 16-valve
<b>CAPACITY:</b>	1998cc	1995cc	1995cc	1995cc
<b>POWER:</b>	192hp @ 5000-6000rpm	150hp @ 4000rpm	190hp @ 4000rpm	231hp @ 4400rpm
<b>TORQUE:</b>	207lb ft @ 1250-4600rpm	243lb ft @ 1750-2750rpm	295lb ft @ 1750-2500rpm	332lb ft @ 1500-3000rpm
<b>0-62MPH:</b>	(7.4 seconds)	9.2 seconds (9.2)	(7.6 seconds)	(6.6 seconds)
<b>TOP SPEED:</b>	(139mph)	127mph (127)	(136mph)	(146mph)
<b>ECONOMY:</b>	(44.8mpg)	68.9mpg (65.7)	(57.6mpg)	(56.5mpg)
<b>EMISSIONS:</b>	(146g/km)	109g/km (114)	(128g/km)	(132g/km)

*Figures in brackets refer to automatic models*







Sport version of the X1 features similar trim strips as found in the rest of the range, shown here in Coral red. Interior looks far more modern than the old X1's and fixtures should be of a higher quality. Petrol engine will be offered as a 20i in UK



as well as a 10mm lower ride height.

While we haven't yet been able to see the car in the flesh it would seem that some of the greatest strides over the first generation X1 have been made inside the new model. The interior of the E84 was certainly looking its age and for the new model BMW has drawn inspiration from the Active Tourer and it looks so much better for it. There's the modern interpretation of the BMW dash with the floating iDrive monitor (standard with a 6.5-inch display, 8.8-inch optional) and the interior generally seems to exude a feeling of quality which is definitely a step in the right direction. Despite the car not increasing significantly in overall dimensions BMW says that there is an additional 36mm of knee room for rear seat passengers and if the optional sliding rear seats are spec'd then this can increase to an extra 66mm. The height of the seats from the ground has also increased with the front seats being 36mm higher and the rears 64mm and the new model also features improved head, shoulder and elbow room, too. The boot has increased in size, too, with a 505-litre capacity which is 85-litres more than the old model – fully fold the seats down and there's an impressive 1550-litres of carrying capacity.

For the UK market there will be four trim levels: standard, Sport, xLine and M Sport. Standard spec includes cloth seat surfaces in an Anthracite/Black combination, and interior trim strips in Oxide, Silver or dark matt with accent strips in high-gloss Black. Dakota leather trim in Black or Canberra beige can be ordered as an option, as can interior trim strips in fine-wood matt Oak Grain and Finition Stream.

The xLine model features a BMW kidney grille with



bars that are matt aluminium at the front, with matt silver accents for the air intakes, side skirts and underbody protection. The interior trim comprises Dakota leather with perforated and contrast stitching, available in Mocha, Oyster, Black or Canberra beige with black accents and interior trim strips in high-gloss Black with accent strips in Pearl Gloss Chrome. This pack also benefits from LED headlights and heated front seats.

The Sport Line model features black BMW kidney grille bars, air intakes with accents in high-gloss Black and underbody protection in Black Silver with an inlay painted – like the side skirts – in body colour. The interior of the Sport Line model features black sports seats with either red or grey accents, and interior trim strips in high-gloss black or aluminium with accent strips in matt Coral red.

M Sport models are fitted with a model-specific M aerodynamic package and 18-inch (or optional 19-inch) M light-alloy wheels. This pack also benefits

from LED headlights. The interior features heated front sports seats in anthracite-coloured cloth/Alcantara with blue accents, and Aluminium Hexagon interior trim strips with accent strips in matt blue. An M leather steering wheel and a BMW Individual headliner in Anthracite are also specified.

Other standard features for the new X1s include LED daytime running lights for all models, an automatic tailgate, Business satellite navigation, front foglights, DAB radio, heated mirrors, a rain sensor with automatic headlight activation and an extended storage package.

Overall the new X1 looks to take a large step forward over its predecessor. To our eyes it looks more stylish, offers improved performance, refinement and economy and, perhaps most important of all, brings a higher quality interior and the promise of an improved ride quality. The new X1 will go on sale on 24 October this year with prices to be announced closer to its market launch.



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# BMW's 3.0 CSL Homage breaks cover

BMW reinterprets the iconic  
CSL Batmobile for the Villa  
d'Este concours event

Words: Bob Harper  
Photography: BMW







It's becoming a bit of a BMW tradition to reveal a 'Hommage' at the annual Concorso d'Eleganza at the Villa d'Este on the shores of Lake Como and following in the footsteps of the M1 Hommage in 2008 and the 328 Hommage in 2011 we now have the 3.0 CSL Hommage that was unveiled at this year's event. It's a striking piece of design but as with the two previous Hommage cars it's not destined for production, although it's certainly possible that some of its design elements will make it on to future generations of BMWs.

"Our Hommage cars not only demonstrate how proud we are of our heritage, but also how important the past can be in determining our future," said Adrian van Hooydonk, senior vice president of BMW Group Design. "The BMW 3.0 CSL Hommage is a nod to the engineering achievement exemplified by the BMW 3.0 CSL in its lightweight design and performance. With intelligent lightweight construction and modern materials, the 3.0 CSL Hommage brings

the character of that earlier model into the 21st century, showing it in a new and exciting guise," he continued, summarising the approach the design team took with the BMW 3.0 CSL Hommage.

It's a very arresting design and you'll be able to make up your own minds as to which elements you like, but to our eyes the proportions look to be just about perfect and from the rear three-quarters, from above and in profile it's stunning. We're not 100 per cent sure about the front end though, with those over-sized kidney grilles looking a little out of place and we also feel that the front-wheel arch extensions don't blend into the bonnet quite as effectively as the rear arches blend into the rear wings.

There is some lovely detailing on the car and lots of design touches that give a nod to the original 'Coupé Sport Leichtbau'. Golf yellow was an iconic colour for BMWs in the 1970s and it was one of only four colours that were offered on the original carburetted E9 CSL when it was first launched. The

black strips that run around the car's waist are a nod to the past as are the plastic air guides that sit atop each of the front wings as are the BMW roundels situated at the base of the C-pillar by the Hofmeister kink. The hoop at the top of the rear screen and the large rear spoiler would have come as part of the 'Batmobile' kit in the 1970s – supplied in the boot to be fitted by the owner to satisfy both homologation and various European legislation requirements.

It's a little hard to get a sense of size when looking at the CSL Hommage but it's a pretty big machine – on a par with the current M6 Coupé, although with the CSL's wide-arched look it's a fair bit wider. Wheels are on the large side too, 21-inches in diameter and wearing 265/35s up front and huge 325/30s at the rear. As this new machine is a homage to the original lightweight racer it should come as no surprise that BMW has used plenty of materials that reflect this. Back in the day aluminium was the material of choice but these days CFRP (carbon-fibre-reinforced plastic)







**“Our Hommage cars demonstrate how proud we are of our heritage”**

offers the optimum weight-to-strength ratio and it's used extensively in the CSL Hommage. The front spoiler is of CFRP and this helps to direct air to the engine and add downforce while at the side, the lower sill sections are also made of carbon. The car's obviously spent some time in the company's wind tunnels as BMW speaks about 'air flowing optimally along the sides of the vehicle' while the rear wing provides downforce and the cameras used in place of door mirrors help to reduce drag. BMW has also used its Air Curtain and Air Breather systems that we're familiar with from the current production range to smooth airflow around the car.

As is generally the case with its Hommage machinery BMW hasn't given us a huge amount of information about power, torque or performance but we do know the CSL is driven by its rear wheels and features a 3.0-litre turbocharged engine coupled to its eBoost system so we'd estimate that it would have just shy of 400hp which in a lightweight body should

endow the Hommage with decent, if not groundbreaking, performance.

The Hommage also has plenty of high-spec aspects – headlights are a combination of LED and laser lights, while the contoured and stylised rear light setup is also of the LED variety. Inside it's also bang up-to-date with a very minimalist cabin constructed largely from CFRP to keep the weight down and there's just a simple sliver of wood that runs around the rear of the dash which is a nod to the original's wooden dash. Instrumentation is pared down to the minimum with just a small eBoost gauge in place of where we'd normally expect to find an iDrive display while the driver makes do with a small display which indicates the current gear, speed, revs and shift point. There are a pair of bucket seats with yellow detailing to echo the exterior paintwork and these have six-point harnesses. Elsewhere in the interior there's a fire extinguisher but the rear seats have been banished in place of spaces to hold two helmets

(secured in place by a strap when not in use) and there are a couple of covers for the eBoost accumulator which have what BMW describes as 'special reflector technology in combination with LED strips that create an impressive 3D effect'.

There's no doubting that the 3.0 CSL Hommage is an arresting piece of design although we would have preferred something with a slightly less outlandish treatment to the classic kidney grilles. BMW reckons that what we have here is 'the characteristic BMW kidney grille' that 'stands tall in citation of the more upright styling of the kidney grille of yesteryear. The size and spatial depth of the kidney grille symbolise the output of the powerful six-cylinder in-line engine with eBoost'. Whatever your view we'd certainly like to see some of the styling elements of this machine – perhaps somewhat toned down in areas – feature on the next generation of BMW road cars, and a pukka road-going CSL for the 21st century would certainly go down very well in our book.







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# Faster Sixes debut at Nürburgring

At the Nürburgring 24-Hour race BMW M showcased its new M6 GT3 road car and introduced an even higher output Competition package for the road car, too

At the Nürburgring 24-Hour race BMW M likes to bring along something a little bit spicy to wow its guests at what it calls 'The M Festival'. In the past we've caught early glimpses of the new M5, the 30 Jahre M5, and the M3 CRT. This year, however, M outdid its previous efforts with two first public unveilings. First up, the covers were pulled off the new M6 GT3 machine and while it might have still been wearing its psychedelic camouflage wrap there was no getting away from its massive presence with blistered arches, a huge rear wing and purposeful stance. The second machine to be revealed was the new M6 Competition pack which now boasts more power and torque than ever before.

BMW Works driver Jörg Müller drove the GT3 machine onto the stage at the M night and certainly looked as if he would enjoy driving the car in

endurance events next year. At the heart of the M6 GT3 will be a race version of the road car's 4.4-litre V8 engine with M TwinPower Turbo technology and it will only be slightly modified for its outings on the race track, most notably gaining dry sump lubrication. While the road car now receives 600hp with the Competition pack the race car will probably be pegged back to around 500hp thanks to balance of performance regulations. However, with a weight loss of around 500kg, a six-speed sequential racing transmission and a chassis and aerodynamic package that's been honed in the BMW wind tunnel, BMW Motorsport is hoping it has a winner on its hands.

Not only is it important for BMW Motorsport to have a new race car with which to meet the challenge of the increasingly competitive GT3 category, it's a significant bonus that this racer is

based on an M road car. The Z4 GT3 might have an M engine but as there's no Z4 M for the road these days the link between the race and road car programmes was slightly more tenuous. "The BMW M6 Coupé obviously provided us with a sensational base on which to develop the new car," said BMW Motorsport Director, Jens Marquardt. "That makes it twice as much fun for our engineers, working hand in hand with their colleagues at BMW M, to transform it into a car for the race track. We are hugely looking forward to the first race outing of the BMW M6 GT3 in 2016. I am sure we will continue to add chapters to our motorsport success story with this car."

For the time being, though, it's the new Competition pack for the M6 that's most relevant. It offers 600hp and 516lb ft of torque which, for the Coupé, brings the 0-62mph time down to just 3.9





seconds while 0-200km/h (124mph) takes just 11.8 seconds – a reduction of 0.6 seconds over the pre-face-lift 575hp Competition model. The Competition pack includes various measures designed to enrich the cars' handling. To this end, the springs, dampers and anti-roll bars all get firmer tuning. The Active M Differential on the final drive works with its own control unit to further improve traction while the M-specific Servotronic steering has more direct mapping and the M Dynamic Mode of the DSC system is focused even more intently on delivering sporty handling. Externally the Competition features 20-inch double-spoke 601M bi-colour alloys plus black chrome twin tailpipes for the sports exhaust system. The Competition package will make its debut in July this year and will be available on Coupé, Convertible and Gran Coupé at a cost of between £6300 and





BMW Motorsport boss, Jens Marquardt (left), and head of M, Frank van Meel (right), discuss the performance potential of the new M6 GT3 and M6 Competition package



£7300, depending on the model.

While we were attending the M Festival we also spoke to Frank van Meel, Chairman of BMW M, to see if we could glean his thoughts on the direction BMW M would be taking in the coming months and years. Given the M6 launches that had taken place our conversation initially centres around those cars. "We are so happy about having the M6 GT3," he said enthusiastically, "as that's really derived from the base car, especially with regards to the engine, and it's very important to have this close relationship between M and BMW Motorsport. I think it's what our customers expect from us, to take as much from racing, to be as close to racing as possible with our cars. We're confident it will be competitive. It's nicely balanced, has a long wheelbase, which is good for the fast corners, and has a good balance between engine power, aerodynamic performance and weight distribution. And as far as I know Jens Marquardt is quite happy about the car because he can play with all these different ingredients."

It's inevitable that van Meel will have been asked hundreds of times about the possibility of a road-going derivative but we ask the question anyway: "First we wanted to bring the Competition package which is bringing more performance. The question you've asked has been asked quite a lot of times now and it's something we might take a look at, but as you know we have a lot of other projects we're thinking about. We need to look at whether the market is big enough for such a project." There's a slight twinkle in his eye that makes us think that at some stage an M6 GT3 for the road might well be a possibility, which is a mouth-watering prospect.

We briefly discuss whether the M4 MotoGP Safety Car that we featured last month is actually the

blueprint for the M4 GTS. While he won't confirm or deny whether this is the case, he's obviously a big fan of the car's water injection system: "When our head of engine development came up with the idea to do the water injection he was really happy because it's so easy and it works: it gives you more performance, more torque and less fuel consumption."

We move onto the M2 and while he has to toe the corporate line, "I can't comment right now on any future vehicles", he does reveal that he was a great fan of the 1 Series M Coupé: "It was very sharp. What's important is to make our cars emotional and sharp and edgy, and that was a very edgy one. So I think it would suit us very well to do that again." Again he has that wry smile that says, 'it's coming but I just can't tell you about it yet'. In passing, an M7 is deemed to be unlikely at the current time even though he does concede that technically it would be possible. More high performance SUVs do seem to be in the offing, though, as the demand for these machines is high but he does make one proviso: "If we do an M car we want it to be the best in the segment. If we can't be the best in the segment we won't do the car."

The question of the X M cars also brings up the question of four-wheel drive M cars and whether we've reached the limit of rear-wheel drive with machinery, such as the M6 Competition? "I think we are now at the limit," he says. "If you go on adding more horsepower and torque it will probably go over the limit." While weight is likely to drop with future models he conceded that power and torque outputs were unlikely to drop which will bring ever-improving power-to-weight ratios. Fear not, though, as from van Meel's description we're not likely to receive dull-handling four-wheel drive Ms in the future: "First of all

I don't like the term 'four-wheel drive'. For us the main philosophy of vehicle dynamics is rear-wheel drive so we have a rear-biased vehicle dynamics, and that has to remain always as that's what we stand for. We look at it as rear-wheel drive with a little more traction." This sounds like a good thing to us.

What else the future will bring is hard to say but van Meel reckons that while customer demand is still there the manual gearbox will stay, even if from a technical standpoint "the future doesn't look very bright." He also said that M will "do some projects in the future regarding small, limited-run editions because that's one of our strategies to do more often", which certainly sounds interesting. He also confirmed that there is plenty of transfer between BMW M and BMW i behind the scenes in terms of how technology can be used but currently he doesn't see a part-electric M car as being on the cards: "It's very interesting to see what i has done with the i8. It's a good way of looking at if there are any possibilities to bring electromobility into M cars but right now we have a power-to-weight ratio issue that's really difficult to resolve right now and currently it's not fully suited to high performance road cars."

While the immediate future is the M6 Competition, the M4 GTS, the M2 and the possibility of an 100 years of BMW birthday present from M in 2016, in the long-term van Meel is quite open to alternative drivetrains but says the core BMW M values will not be open to question: "The philosophy will be the same: agility, precision dynamics plus race track ability. That's what we stand for. The technology that will be used may be different but we will always look at what works the best. The philosophy will be the same but the technology is open." The future of M certainly looks to be in safe hands.



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## Bilstein EDC compatible coilovers for F8x M3 and M4

The respected German manufacturer Bilstein has released a new B16 'Damptronic' system that offers a dramatic improvement in handling prowess but retains full EDC integration to allow the driver to select the ideal damping rate whilst on the move. Available to fit all variants of the latest M3 and M4 models, the kits can also be ordered without electronic integration, using Bilstein's superb 'PSS10' ten-click adjustment system. Both kits offer OEM levels of fit, finish and ride quality, coupled with significant improvements in handling. The kit offers a drop of between 20mm and 40mm and features a 12 month warranty.

**Price:** From £1982.40

**Contact:** [www.bilstein.com](http://www.bilstein.com) or call 0116 2478930



## Powerflex subframe mounting bushes for E36

Two new polyurethane bushes have been added to Powerflex's BMW E36 3 Series range. These new parts fit in to and fill voids in the original rubber subframe bushes to stabilise the rear of the car. Fitting is simple and reduces subframe movement without the need to drop the subframe from the car. There's both a front and rear subframe insert available and they fit

all E36 models except the Compact, which has the E30 rear beam layout. For vehicles used in motorsport or on track, they are also available in the harder Powerflex Black Series range. All Powerflex bushes carry a lifetime warranty.

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## Air filter for side draft carbs or throttle bodies

Webcon is introducing a new range of Alpha branded foam filters to suit DCOE style twin side draft carburettors or throttle bodies. The filters are supplied with blank backplates to allow them to be fitted to a wide range of applications, and are

available in 90mm, 120mm or 150mm lengths.

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**Price:** From £71.94

**Contact:** [www.webcon.co.uk](http://www.webcon.co.uk) or call 01932 787100



## MOMO SK51 gear knob

MOMO's latest gear knob is the SK51, named in celebration of the company's 51st year in business. It features very traditional design traits such as the horizontal flutes, hex nut details and satin finish with a bright yellow MOMO logo. The solid billet aluminium knob also adds weight to the shift for more precise and deliberate shifting and the larger diameter is also ergonomically better than many original gearshift knobs.

**Price:** £61.79

**Contact:** [www.momo-uk.co.uk](http://www.momo-uk.co.uk) or call 01268 764411



## Ultra Racing strut brace for E85 Z4

Details have been released of the new stylish and effective strut brace from Ultra Racing. Designed for both the 2.5- and 3.0-litre Z4 models it features a unique 'one-piece' steel construction, making it far more rigid and effective than many three-piece designs. With the front suspension

components able to stay much nearer to their optimum pick-up points while under load, suspension geometry is maintained torsional rigidity increased.

**Price:** £145.74

**Contact:** [www.ultraracing.co.uk](http://www.ultraracing.co.uk)



## MOMO Indy steering wheel

This new traditionally styled wood rim steering wheel from MOMO was designed to represent the company's long standing heritage in motorsport. The wood rim is made from genuine mahogany and it surrounds the classic perforated silver metal spokes. To finish it off, there's the classic MOMO arrow logo on the centre horn push.

**Price:** £234.98

**Contact:** [www.momo-uk.co.uk](http://www.momo-uk.co.uk) or call 01268 764411



## Dinan Stage 2 for N55 engines

After a lot of development in both software and supporting parts, American tuner Dinan has launched its Stage 2 package for the N55 engine. Users can expect to see gains of up to 58hp and 83lb ft of torque through a Dinantronic tune, free flow exhaust and a newly designed cold air intake system. The new air intake passes air through a large high-flow filter, past an upgraded MAF sensor and into a carbon fibre tube that provides much less restriction than the stock item. Even without any other modifications, users can expect gains of 10hp and 15lb ft of torque.

**Price:** EPOA

**Contact:** [www.dinancars.com](http://www.dinancars.com)



## Litchfield Sport spring kit for F8x M3 and M4

UK-based tuner Litchfield has unveiled its sports spring upgrade for the current M3 and M4. The springs have been developed exclusively for Litchfield and are targeted at drivers looking to truly focus the handling and character of their M cars without having to compromise on ride quality or daily-driving

usability. Working with the factory EDC system, a carefully considered 25mm drop up front and 20mm at the rear marginally increases weight on the front end for nicer turn-in characteristics. The lower ride height and improved spring rate also help the car to stay flatter in the turns, increasing mechanical grip

and reducing load transfer. WTCC champion Rob Huff has led development throughout the R&D process and the kit comes with five-year, unlimited mileage warranty.

**Price:** £282

**Contact:** [www.litchfieldmotors.co.uk](http://www.litchfieldmotors.co.uk)

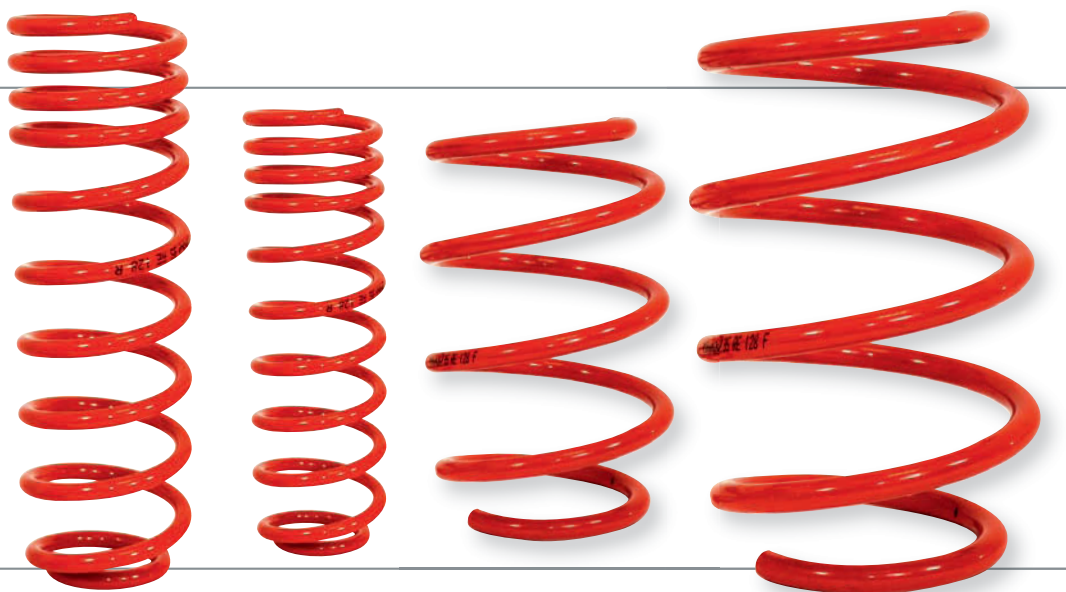


## V-MAXX sport springs for E36

Suspension maestro V-MAXX has developed a new sports spring kit for all models of the E36 3 Series, both coupé and saloon, except the M3. The kit offers a drop of about 60mm at the front and 45mm at the rear, giving a lower centre of gravity for less body roll and sharper steering. They've been designed to work with any sound OEM dampers and any uprated aftermarket equivalents and feature an unlimited mileage two-year warranty.

**Price:** £141.60

**Contact:** [www.v-maxx.co.uk](http://www.v-maxx.co.uk)



## Samco silicone hose kit for E36

There's a new silicone hose kit from the guys at Samco to suit the E36 3 Series. It's designed to replace the existing coolant hoses on any E36 3 Series fitted with the M50 straight-six engine, so that includes the 320i, 323i, 325i and 328i models built up until 1995. The kit is available in

19 different colours and there is also a replacement hose clip kit suitable for the package for an extra £9.74.

**Price:** £98.04

**Contact:** [www.amber-performance.co.uk](http://www.amber-performance.co.uk) or call 0845 260 0015



## AmD tuning package for E9x M3

Essex-based tuners AmD has just released a tuning package for the E9x M3 which consists of a Cobra Sport stainless-steel performance exhaust system and matched AmD software remap to make full and efficient use of the benefits of the exhaust. The new system uses larger than standard diameter stainless-steel pipework and mandrel bent curves to improve gas flow, minimise back pressure and optimise throttle response. The AmD remap then enhances these benefits without any fault codes being triggered in error. AmD is also offer free fitting on all Cobra Sport Exhausts, or, if you prefer to buy by mail order and fit it yourself, it will offer ten per cent off and free delivery.

**Price:** POA

**Contact:** [www.amdtuning.com](http://www.amdtuning.com) or call 01708 861827



## Piper Cross panel filter for 850i

Performance filtration specialist Piper Cross has provided the perfect breathing solution for BMW's increasingly collectible E31 850i. The Piper Cross panel filter is a direct replacement for the factory part, maintaining originality whilst improving performance. The torque V12 is a great recipient for breathing mods and this filter is the ideal first step. Flowing over 30 per cent more air than the original this beautifully made filter can make significant improvements in power, torque and driveability and comes with a full lifetime warranty.

**Price:** £35.99

**Contact:** [www.pipercross.com](http://www.pipercross.com) or call 01604 707750





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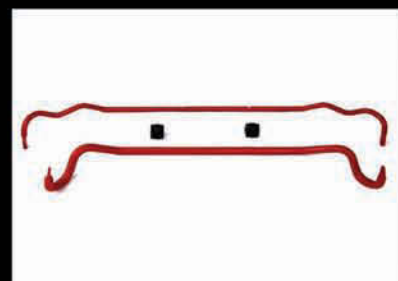
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# New Faces

**The 1 Series has received its mid-life nip and tuck and we've sampled a selection of the new range to see if the beauty runs further than skin deep**

**Words:** Bob Harper **Photography:** BMW

Since I've been working with the BMW brand for the best part of 30 years, it's true to say I've seen a number of new models make their debuts and also seen more than my fair share of mid-life nip and tuck face-lifts – and the one that BMW has just put into production for the F20 and F21 1 Series has to be one of the most radical. Beauty is in the eye of the beholder but for me the pre-face-lift 1 Series had the sort of face that only a mother could love. I wasn't

a fan and to my mind it was an even worse attempt at a traditional front end than the original E65 7 Series. What do I know though? That old E65 sold well and some days on my morning commute it seemed virtually impossible to drive for more than a couple of hundred yards without seeing an F2x generation 1 Series. In fact, since the arrival of the 1 Series just over ten years ago BMW has sold nearly two million examples and in the UK it accounts for around every one in four BMWs sold.

Personally, then, I was delighted that BMW decided to opt for a significant update for the 1 Series and it's odd to think that work on the face-lifted machine was already well under way when the pre-face-lift droopy-eyed version was only just going on sale three years ago. The changes that BMW has wrought on the car are plain to see with reshaped front and rear bumpers with wider openings to give the car an increased sense of width, but the greatest update has been to the lights with the front end receiving a better integrated set of headlights, more closely aping those of the 2 Series Coupé while at the rear we have a

more traditional set of L-shaped LED units that now stretch on to the bootlid whereas before they were simply perched on the rear wings. Overall I'd say it's a better look for the car and my only nit-pick is that with the enlarged rear lamp units the location of the model designation on the rear hatch looks a little odd.

I won't bang on about the looks any more though as there's far, far more to the LCI 1 Series than a cosmetic nip and tuck. There are a host of new engines, enhanced levels of equipment and, of course, the news that the 1 Series will benefit from BMW UK's adoption of sat nav across the range from September. On the international launch that we covered a couple of issues back, we drove the 120d xDrive and the M135i so on this BMW UK launch event we decided to sample some of the models that might not necessarily be the headline grabbers, but the ones that are most likely to be purchased by the vast majority of customers, so here we've driven the 116d EfficientDynamics, the 118 in both i and d formats and the range-topping diesel in the form of the 125d.



Personally I was delighted that BMW decided to opt for a significant update for the 1 Series



BMW has made extensive changes to the 1 Series with new headlights and tail-lights as well as a host of revisions to the engine line up. Above: 125d M Sport really looks the part now and offers an excellent blend of performance and economy



The entire diesel engine line-up in the 1 Series is made up from the new 'B' generation of BMW engines and the first to come under the spotlight was the new 125d. Developing 224hp and 332lb ft of torque it posts some impressive performance credentials – 0-62mph in just 6.3 seconds, a top speed of 149mph yet a combined economy figure of 61.4mpg and emissions of 121g/km. Our test car was a three-door M Sport with the eight-speed auto and in dark grey it looked very stylish and purposeful.

On the highways and byways of Wiltshire it was capable of putting in a pretty convincing performance, bombing down the lanes with real verve yet showing getting on for 50mpg on the OBC when taking it a little easier. The four-cylinder engine is significantly more refined than its predecessor and only makes itself heard when really extending it. For someone who is after some serious performance potential but who also wants something that will be parsimonious on their daily commute this could be the ultimate package. The only fly in the ointment is its £29,800 price tag – it's only available as an auto and only in M







Face-lifted 1 Series

MODEL:	116d ED	118i	118d	125d
ENGINE:	3-cyl diesel	4-cyl petrol	4-cyl diesel	4-cyl diesel
MAX POWER:	116hp	136hp	150hp	224hp
MAX TORQUE:	269lb ft	162lb ft	243lb ft	332lb ft
0-62MPH:	10.4 secs	8.5 secs (8.7)	8.3 secs (8.1)	(6.3 secs)
TOP SPEED:	121mph	130 mph (130)	132mph (132)	(149mph)
ECONOMY:	83.1mpg	52.3mpg (50.4)	70.6mpg (74.3)	(61.4mpg)
EMISSIONS:	89g/km	125g/km (129)	104g/km (99)	(121g/km)
PRICE FROM:	£22,560	£20,775	£22,895	£30,330

Prices and performance figures refer to five-door version. Figures in brackets refer to eight-speed automatic



Sport guise so if you did want to save some money and have almost as much fun behind the wheel you could save yourself a pretty tidy sum by opting for a 120d instead.

Petrol-engined machines seem to get overlooked sometimes these days but with the latest generation of turbocharged engines the petrols are able to get far closer to the diesels than they used to. There has been some massaging of the model designations along the way and for the UK market the entry-level model will change from being the 116i to the 118i which uses a four-cylinder 1598cc unit that develops 136hp and 162lb ft of torque. Its vital stats are a 0-62mph time of 8.5 seconds and a top speed of 1340mph which doesn't seem shabby for an entry-level machine. Claimed economy and emissions figures of 52.3mpg and 125g/km are impressive too.

In other markets there's still a 116i on offer that's powered by the three-cylinder 1.5-litre unit but this model won't be coming to the UK. The 118i though certainly seems pretty sprightly and can cover ground faster than you'd expect from the base model in the



I'd head in the direction of the 118d as it feels like it has enough power to bring the chassis to life



Far left: 116d EfficientDynamics now features a three-cylinder 1.5-litre diesel and is capable of returning over 80mpg according to the official figures while emitting just 89g/km of CO<sub>2</sub>. Despite its low 116hp output it actually drives really well and must be the pick of the range for the company car driver

BMW UK line-up. The flip side of the coin is that if you do try to extract the performance economy suffers pretty significantly, but driven sensibly the OBC will record figures of over 40mpg which isn't bad if some way away from the cloud cuckoo land official figures derived from the ridiculously skewed EU test. At £20,245 for the three-door it's a pretty cost-effective way into BMW ownership.

Spend another £2000 and you can be slipping behind the wheel of a 118d, which brings slightly improved on-paper performance (0-62mph in 8.3 seconds and a top speed of 132mph) but significantly better economy stats of 70.6mpg and 104g/km. Opt for the eight-speed auto and those latter figures improve to over 74mpg and the CO<sub>2</sub> drops to below the magic 100g/km. On the road it feels significantly sprightlier than the figures suggest due to a much beefier mid-range thanks to its 243lb ft of torque. Despite the improvements made to the 118i, if it were my money I'd be heading in the direction of the 118d as not only does it feel like it has enough power to bring the chassis a bit more to

life it will be significantly more economical, too.

The last machine I sampled was the 116d EfficientDynamics and given that the rest of the cars I'd tried should offer better performance I was expecting the 116d ED to feel a little lacklustre. Unlike the rest of the 1 Series line up the ED uses a three-cylinder 12-valve unit that develops 116hp which sounds a little underwhelming but this is backed up by a pretty meaty 199lb ft of torque. You'll have to be happy swapping cogs yourself with the six-speed manual and if you try hard the official stats say you'll be able to knock off the 0-62mph dash in 10.3 seconds. Its undoubted trump card is its ability to travel 83 miles per gallon while emitting just 89g/km of CO<sub>2</sub>. As a company car it would appear to be a no-brainer. The three-cylinder engine is a little gruffer than the four-cylinder but it's no worse than the outgoing four-cylinder diesel so it's not as if it's terrible by any means. The surprise for me was that you can actually make pretty decent progress in the car if you have the mind to and if you take things

easy you will undoubtedly see mid-60s economy without really having to try very hard. It's an impressive piece of kit for those on budget, or those who refuse to pay the tax man too much for the privilege of having a company car.

All the models we drove exhibited the improved interior quality that BMW says it's installed in the 1 Series with better cloth and dash embellishments in black which give the car a classier look. BMW UK has also simplified the model structure for the 1 Series with three trim levels – SE, Sport and M Sport – which streamlines the previously rather muddled set up. Spec is pretty impressive and as you'd expect the options list is extensive and makes good use of BMW's suite of Connected Drive services – the more options you tick, the more connected you'll be!

Overall the face-lifted 1 Series has taken the entry-level BMW several steps further up the ladder in terms of styling, engineering, performance, economy and emissions. Expect to see even more of them on the road and the best news for me is that they will no longer be an eyesore! ●



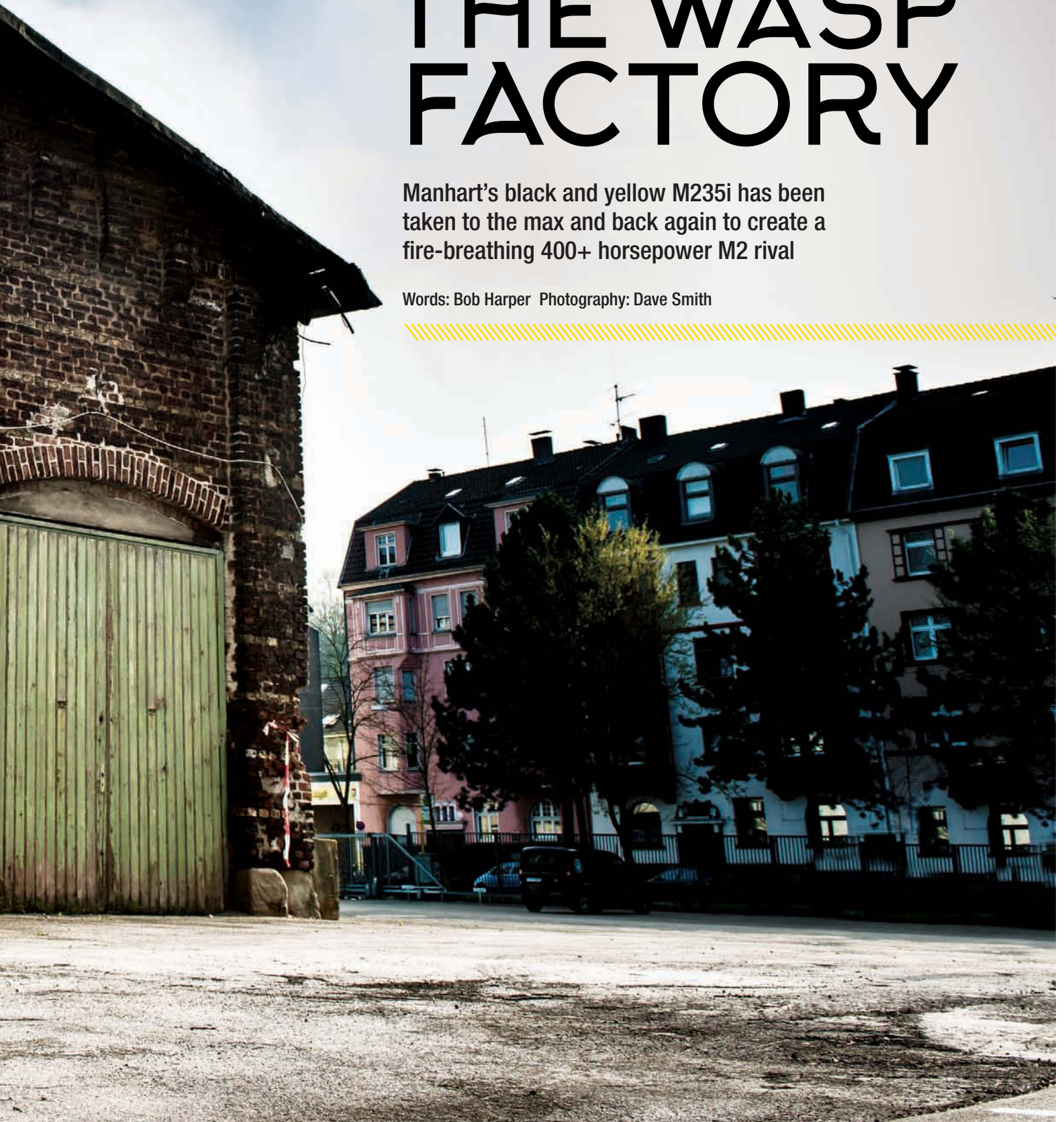




# THE WASP FACTORY

Manhart's black and yellow M235i has been taken to the max and back again to create a fire-breathing 400+ horsepower M2 rival

Words: Bob Harper Photography: Dave Smith





Waiting for the arrival of a new M car can be a frustrating business. We know the M2 will be along shortly, or at least by the end of the year – thinly disguised prototypes clad in the typical black and white swirly-patterned wraps have been keeping the spy photographers busy for a while – and a few scant details about the car have appeared in American BMW dealer paperwork that's been leaked on the internet. But when you ask BMW M's chairman of the board Frank van Meel about the car (as we did when we talked to him at the Nürburgring 24 Hour race) the car's existence cannot be confirmed or denied.

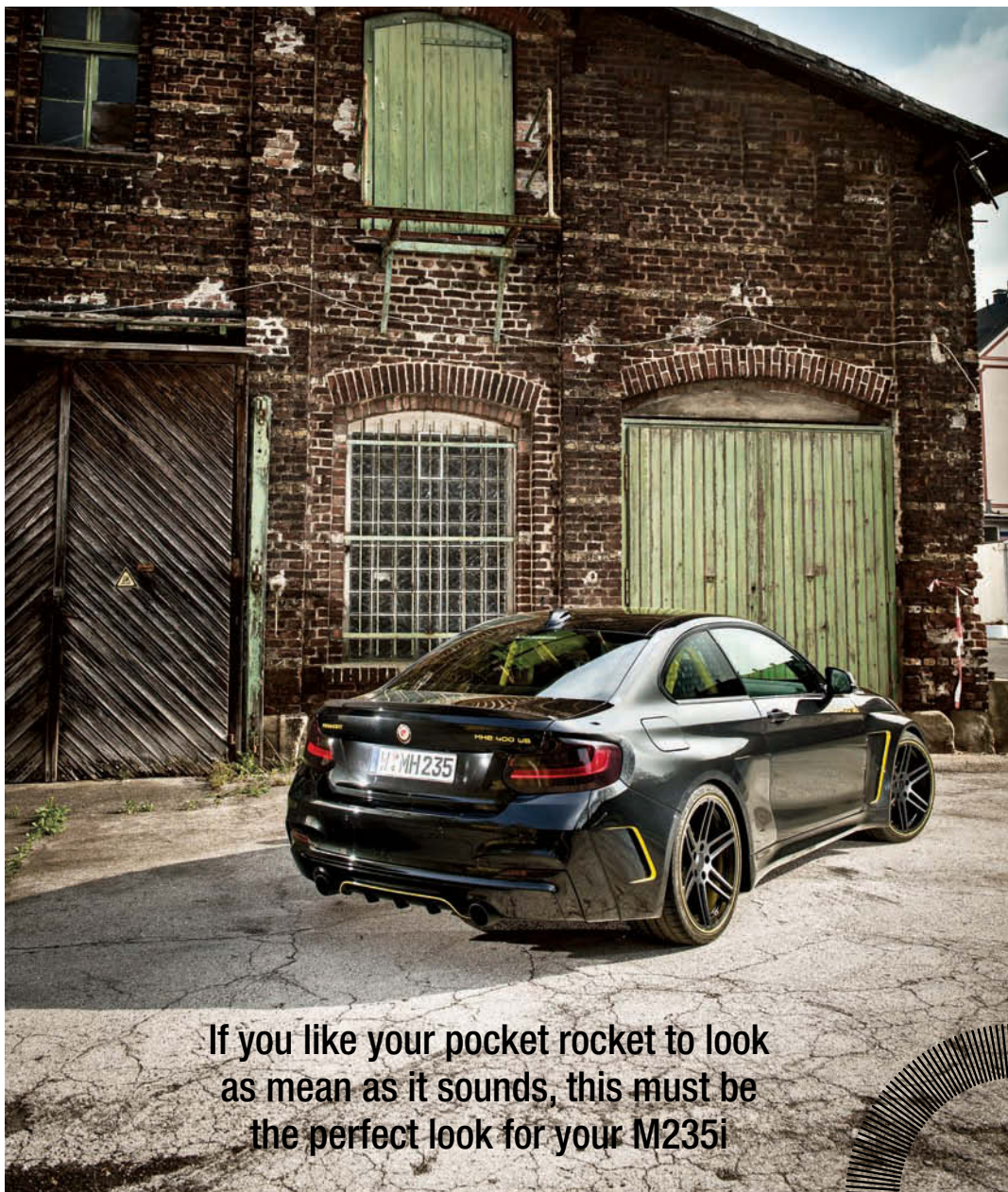
It's definitely coming though, and when it is eventually revealed you can more or less bet your bottom dollar that it will be very similar in concept to the much-loved 1 Series M Coupé that had a limited production run of just under 6500 examples during 2011 and 2012. Thus it will be a blend of M235i and M4 components and promises to be a pretty stunning machine, but, and it's quite a big but, you can guarantee that BMW won't endow it with so much performance that it will take sales away from the much more profitable M4 – that just wouldn't make financial sense. So if you're after the ultimate in pocket rockets you're probably going to have to look to the aftermarket, and you don't even have to wait for the arrival of the proper M2 either as Manhart Performance is already building it in the form of its MH2 400 WB.

It's not a machine for shrinking violets, at least not in the form you see here, as this machine was actually built for the company's stand at the Essen Motor Show at the tail end of last year which accounts for the special black wrap with yellow highlights, but as it stands, hunkered down on its Clubsport suspension in front of us, it does look pretty awe-inspiring. It doesn't matter where you look, there seems to be very little of the standard M235i left and it's plain to see that Manhart has carried out a very comprehensive conversion.

Let's start with the looks as so far all we've done with the car is trundle down the road from Manhart's HQ to a suitably dilapidated building that seems to have piqued snapper Smithy's creative juices. All we really know about the MH2 so far is that on cold start up it sounds a little like someone has just unleashed the hound of the Baskervilles and that the four-point harnesses are a pain in the backside for road work.

Even sitting stationary it looks absurdly purposeful, as if it's an affront to its DNA that it should have to sit still for any length of time. At the heart of its looks is a Manhart wide-body kit that features a set of heavily revised front- and rear-wheel arches that appear even wilder than those fitted to the M235i Racing track car and widen the M235i by 12 centimetres. These blistered arches have been skilfully blended with a few items from the BMW M Performance accessories catalogue such as the lower front lip spoiler, the rear diffuser and the carbon boot spoiler.

The overall effect is absolutely stunning. If you like your pocket rocket to look as mean as it sounds this must be the perfect look for your M235i. As well as the paint work the other aspect that makes the car look particularly aggressive is the set of Manhart 'Concave One' alloys, 20-inches in diameter and 9.25-inches wide at the front and 10.5-inches wide at the rear. These are wrapped in Michelin Pilot Super Sport tyres measuring 255/30 and 295/25 front and rear respectively. The wheels on this example are the matt black versions with a yellow key line painted around the edge of the rim, but if I were buying I'd go for the silver version of the wheel – I'm bit old school and prefer wheels to be silver!



If you like your pocket rocket to look as mean as it sounds, this must be the perfect look for your M235i







That's nit-picking though as the aesthetics are simply stunning and every time I drink in another detail of the nightclub bouncer-look exterior I just want to jump in and drive the wheels off it to see if it's as similarly hardcore from behind the wheel. As this was a show car built to a 'Clubsport' spec, Manhart has also gone to town on the interior with a set of Recaro Pole position seats, the deletion of the rear seats which have been replaced with a half cage painted in the lurid yellow and to which have been attached a set of Schroth harnesses.

Plenty of the interior details have also been picked out in yellow and Manhart has installed a few items from the M Performance accessories catalogue here too, such as the hand brake handle, gear knob and pedal set. There is also one of those rather natty displays replacing one of the air vents that shows boost, power and torque, performance etc which does look rather cool and can display a whole host of useful information.

So far then there's no doubting the Manhart MH2 400 WB looks the part and from our brief excursion down the road it sounds the part too, but if you're looking for an alternative to the M2 it's going to have to have the performance to back up those looks and Manhart has certainly come up trumps in this department. The company has been fettling BMWs for more years than it cares to remember although it's actually only fairly recently that it has been doing this under its own name, but with the advent of the turbocharged BMW engine it's really been able to bring big power outputs to the table. Its work on the M235i's N55 'six is no exception with power taking a hike from 326hp to 413hp at 6250rpm while torque has been boosted from 332lb ft to 416lb ft at 3590rpm. The top speed limiter has also been removed which Manhart reckons takes top speed up to over 300km/h which is getting on for 190mph. To release this additional power, Manhart has tweaked the ECU, installed a cat-less downpipe and a bigger bore exhaust as well as installing its uprated intercooler which gives 30 per cent more cooling power than the standard item.

Power, as they say, is nothing without control, and to this effect Manhart has endowed its MH2 with a series of revisions under the skin to ensure that the additional power and torque can be safely deployed. Stopping power has been taken care of by a set of Manhart 350x34mm front discs clamped by six-pot callipers and while the rear brakes are the standard production items, Manhart has installed steel flexi pipes and Pagid pads, too. As you'd expect the suspension setup has also been honed with the installation of a KW Clubsport three-way adjustable setup which also lowers the car by 40-45mm. Completing the package of under-the-skin upgrades are a Manhart limited-slip differential and a Sachs sintered clutch.

Prior to our visit, the car has been used for plenty of track work so it's been setup pretty aggressively but now Smithy's finished with the static and detail pictures we can finally put Manhart's extensive work to the test. Installing oneself in the cockpit is both a pleasure and a pain. The Recaro seats grip you perfectly in all the right places but the Schroth harnesses are a pain in the behind in a road car, but that would easily be cured by simply leaving them off the spec of my MH2!

Firing the beast up brings the typically bass-heavy *burrumph* you expect to hear from a modern turbocharged machine that's running a meaty exhaust system, and it doesn't matter how many times you hear it, it always raises the hairs on the back of your neck in anticipation for what's to follow. The Manhart exhaust does score well for soon settling down to a







pretty muted idle though as a system that's just loud for the sake of it soon becomes pretty wearing.

The first task is to negotiate our path out of Wuppertal and at low speeds the MH2 is perfectly drivable, although the sintered clutch can be a bit of a pain, juddering slightly if you don't get a perfect pullaway from a standstill. Again it's not a criticism of the car, it's merely a standard feature of this type of clutch – if you don't want it you don't have to have it, although if you're going to be doing a significant amount of track work it would be a wise buy. The Pagid pads also like to squeal a little at low speeds, but again if you're primarily going to be using your MH2 on the road you'd leave them off the order and stick with standard pads.

As we start to leave the town of Wuppertal behind and snake along the river valley the MH2 starts to come alive a little more. There's a huge amount of performance potential here and rapid progress can be made by simply leaving the car in a higher gear and mildly flexing your ankle. If you want more, simply drop down a cog or two and floor it and you'll be very firmly pinned back into the Recaro seat while the Pilot Super Sports struggle for traction as the rear end squats and the nose rises. Make no mistake this MH2 is very, very rapid indeed, and once you've started







This MH2 is very rapid and you get some delicious pops and cracks from the exhaust





using more revs you get some delicious pops and crackles from the exhaust on the over run or when you change gear.

We pull off the main road in search of some more entertaining roads and while the ride quality can be a little lumpy at times (it is set up for smooth track work remember) the car feels hugely planted at all times, especially as speeds rise and we attack a little harder. A couple of tighter hairpins demonstrate that it has an astonishing reluctance to understeer and unless you're pretty brutal with the throttle the rear end remains very planted as well. When traffic allows we dip further into the MH2's performance and we have to say it feels every bit as quick as its 400+ horsepower would suggest and without another machine to make a back-to-back comparison we can't say for sure, but it feels every bit as fast as an M4. Ramp the pace back and it becomes a pretty docile companion once again providing the road surface is decent and now we've given those stoppers a proper work out (which they passed with flying colours) the Pagid pads have quietened down too.

Sadly our time with the car is all too brief as we have another appointment in Germany to get off to but we have certainly had a pretty decent insight into what the MH2 has to offer. For me it feels like the perfect size for a performance car, especially on the UK's smaller roads where even something like an M4 can almost feel a little unwieldy. Its performance is stunning and when you're on a charge the soundtrack is sublime, too.

If you're after an M2 before it's officially on sale then chances are Manhart's MH2 400 WB is the closest thing you're going to get, and who knows, perhaps the official M2 might not even be as sharp as this. One thing's for sure, though, if Manhart can do something as impressive as this with an M235i just imagine what it'll be able to create using the M2 as a basis. We can't wait to find out ●

#### CONTACT:

**Manhart Performance**

**Tel:** +49(0)2 0294 624445

**Website:** [www.manhart-performance.de](http://www.manhart-performance.de)

## Manhart Performance MH2 400 WB

**ENGINE:** Straight-six, 24-valve, turbocharged

**MAX POWER:** 413hp @ 6250rpm

**MAX TORQUE:** 416lb ft @ 3590rpm

**TOP SPEED:** 188mph

#### MODIFICATIONS

**ENGINE:** Manhart MH-tronik Performance Kit Stage 2, Manhart high flow intercooler

**EXHAUST:** Manhart Sport-exhaust, 2x90mm tailpipes (Export version), Manhart 'Race' downpipe (cat-less Export version)

**SUSPENSION:** KW Clubsport Coilover  
Suspension (three-way adjustable) set up to Manhart's specification

**WHEELS:** Manhart Concave ONE Forged 9.25x20-inch (front), 10.5x20-inch (rear)

**TYRES:** Michelin Pilot Super Sport 255/30 ZR20 (front), 295/25 ZR20 (rear)

**BRAKES:** Manhart six-piston front callipers with 34x350mm discs and Pagid pads (front); standard discs with Pagid pads (rear), steel flexi lines all-round

**EXTERIOR:** Manhart wide-body kit, BMW M Performance front spoiler, rear spoiler, rear diffuser, mirror caps, Manhart design elements in yellow

**INTERIOR:** Recaro Pole Position seats, Schroth four-point harnesses, rear seat delete, half cage, Awron vent gauge, BMW M Performance handbrake handle, pedal set, gear knob

**DRIVETRAIN:** Manhart 0-100 per cent locking limited-slip differential, Sachs sintered clutch





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# *The Last Stand*

You could make a good case for the Nürburgring 24 Hour race being the world's greatest motoring event and this year we were hoping the Z4 GT3 would emerge as the victor

Words: Bob Harper Photography: BMW, Frozenspeed, Bob Harper





The 24 Hour race at the Nürburgring is a veritable smorgasbord of an event, a vast cornucopia of a motor race spread out over 25 kilometres and 378 meters of the toughest ribbon of Tarmac on the planet. It's a test of endurance, of nerve and skill and while it might be a cliché, simply finishing the event is a remarkable achievement. It has everything from manufacturer-backed big-buck GT3 entries down to those on an almost shoestring budget frantically pedalling a diesel VW Golf while desperately trying to keep out of the way of the big boys as they muscle their way past. Throw in some weather that the Eifel mountains are famous for where half of the circuit is likely to be bathed in warm sunshine while the other

is experiencing a downpour and you have all the ingredients for the world's greatest endurance classic. The event has changed over the years – starting grids are smaller than they used to be – and this year saw 151 starters when in previous runnings there have been over 200 cars on the grid. For this year's event, there were also speed limits introduced on certain sections of the track in response to a tragic accident back in March when a Nissan GT3 car became airborne at the Flugplatz section of the circuit and went over the catch fencing during the opening round of the VLN championship. These speed limits would really keep the drivers on their toes as speeding infringements carried heavy time penalties and possible bans for repeat or flagrant offenders.

As ever BMW was by far the best represented manufacturer in the race with virtually a third of the starting grid sporting the blue and white roundel. BMW has won this race more than any other manufacturer with 19 outright victories since the race was inaugurated in 1970, and this year it was hoping to bag victory number 20 in what was the Z4 GT3's swansong year. It's come so close in previous events here, finishing sixth, second and fourth in the three previous N24s it has competed in since taking over from the E92 M3 GT as BMW's weapon of choice for GT racing and for this year's event there were to be six Z4 GT3s entering the fray. BMW Sports Trophy Team Schubert had car numbers 19 and 20 driven by Dirk Werner, Marco





The Climax Motorsport M3 might have been the oldest BMW in the race but it lasted the distance well after an early off track excursion



Wittman, Dirk Müller and Alexander Sims (no.19) and Claudia Hürtgen, Dominic Baumann, Jens Klingman and Martin Tomczyk (no.20). BMW Sports Trophy Team Marc VDS fielded car numbers 25 and 26 driven by Maxime Martin, Lucas Luhr, Richard Westbrook and Marcus Palttala (no.25) and Dirk Adorf, Augusto Farfus, Nick Catsburg and Jörg Müller (no.26). For anyone who follows sports car racing this was a pretty tasty driver line-up and as well as these four quasi-works machines there were also a brace of Walkenhorst Motorsport powered by Dunlop Z4 GT3s to act as back up.

It's not all about the big buck entries though as also taking part were two cars from British teams that

you'll have read about in *BMW Car* earlier this year. Back in the May issue we met the Climax Motorsport team which was entering one of the oldest cars in the race – certainly the oldest BMW – with its E36 M3 3.0-litre (car number 177), and if you cast your mind back to the April issue we visited Saxon Motorsport with its array of 1 Series race cars and for the N24 it had entered its 135d GTR (car number 208).

Qualifying for the top 30 cars takes place on Friday afternoon and BMW must have been feeling pretty happy with its driver's efforts with Farfus claiming pole position, for Marc VDS, and Klingmann and Müller bagging third and fourth respectively for Schubert while Martin was on the third row in sixth place in the

other VDS machine. Incredibly Farfus' qualifying time of 8:17.394 was only four seconds slower than the fastest Z4 qualifying time from the previous year despite the speed limits being in place on three sections of the track. As a car's top speed was going to be less of a telling factor this year many teams had added downforce to their cars but plenty of drivers of the quicker cars were concerned that overtaking would be more difficult this year as they wouldn't be able to blast past slower cars, particularly on the long main straight from Döttinger-Höhe to Tiergarten as even the slower machinery would be capable of the 250km/h limit where the GT3 cars would previously have approached 300km/h.





Top: Saxon car was comfortably the fastest in its class. Above: Top placed Z4 makes a pit stop. Right: Red Schubert Z4 lead before crashing out in the second hour



The class structure at the N24 can seem incredibly confusing and perhaps no more so than Class AT in which the Saxon Motorsport 135d GTR was up against an Audi A4, a Dodge Viper, a Focus RS, a 2.0TDi Scirocco and a Volvo V40. Talk about an eclectic mix! The Saxon car was, however, comfortably the fastest car in its class, qualifying in 91st position with a lap time of 10.04 – 12 seconds faster than the Viper that was second in class. In class V5, the Climax guys also did well bagging third in class, beaten to second by less than a second by a Porsche Cayman with the class leading Z4 3.0si four seconds and five overall grid positions higher up.

The start was the usual manic affair with the grid

setting off in three groups with a rolling start but as the leading GT3 machines jostled for position, BMW must have been delighted with the early formation flying from its phalanx of Z4s as early in the race they occupied the top three spots. Things did not start quite so well for the 177 BMW M3 of Climax Motorsport as it was involved in a tangle with a pair of Renault Clios on the first lap which put it into the gravel with some minor panel and steering damage causing an unscheduled 30 minute pit stop which immediately lost the team three laps! At the end of the first hour it was classified 148th out of the 151 starters. On the other hand the Saxon car was pounding round comfortably leading its class for the

first five hours but it too had an off and was down to 114th place by the time six hours came up on the timing screens.

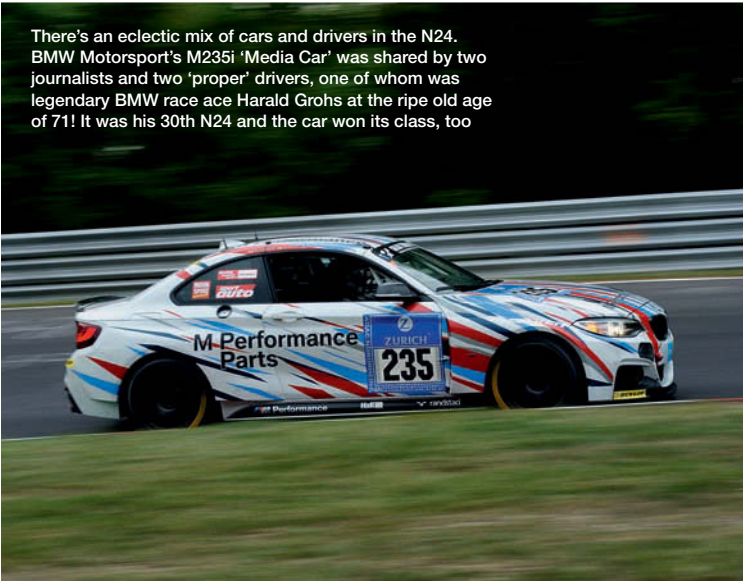
After an hour and a half the inevitable rain fell but it wasn't consistently wet the whole way around the circuit making for exceedingly tricky conditions. This caught out Hürtgen in the number 20 Z4 who crashed at Pflanzgarten which eventually caused the car to be retired due to the extent of the damage.

As is the case with a 24-Hour race there was a constant ebb and flow of leaders and watching the GT3 machinery bellow their way past the slower cars was truly something to behold with Aston Martins, Merc SLs, Audi R8s, Bentley Continental





There's an eclectic mix of cars and drivers in the N24. BMW Motorsport's M235i 'Media Car' was shared by two journalists and two 'proper' drivers, one of whom was legendary BMW race ace Harald Grohs at the ripe old age of 71! It was his 30th N24 and the car won its class, too







GTs and Porsche 911s all in the mix.

As the race entered its night time phase the rain came again and this did not bode well for the number 19 Schubert Z4, with Dirk Werner crashing while running on slicks when the rain fell. After eight hours it was looking like it might be an Audi rout with R8s occupying the top three spots in the race. By this stage the 208 Saxon Car was languishing back in 137th place after a lengthy pit stop for repairs but things were looking up for the Climax M3 as it pounded round with utter reliability after its early off and it was now up to 106th overall.

With six hours to go the number 25 Z4 and the number 28 Audi R8 were locked in a duel for first place and while they were on different pit stop strategies they remained on the same lap until the end of the race with each taking the lead as the other car stopped. As the 20th hour of the race ticked past the BMW was leading but for the last four hours of the race as the clock ticked past the hour mark it was the Audi that led, the BMW losing out ever so slightly

as it wasn't able to go quite so far on a full tank while remaining in maximum attack mode. In the end the Audi won by a scant 40.729 seconds – the closest finish in the race since the inaugural 1970 event. Over the race distance the Audi had been 0.08km/h faster than the Z4 and it must have been agonising for the VDS Team to have come so close on the Z4's last outing at the N24. The Falken Motorsport Porsche 997 GT3 R was third and the number 26 VDS Z4 was fourth with the number 17 Walkenhorst Z4 claiming sixth place – three Z4s in the top six wasn't a bad result in the end by any means.

The Saxon car recovered well to finish 88th overall, third in class, but it certainly showed its potential by comfortably being the fastest car in its class, posting a time of 9:39.556 – three seconds faster than the Viper and nearly 30 seconds faster than the third quickest car in class which was the Volvo D40. Climax Motorsport also finished very strongly, ending the race in 69th position overall, fourth in class and with the second fastest lap in class which showed the

performance potential was there – very impressive from a 20-year-old car that was forced to carry additional ballast! Simon Glenn from the team commented: "We finished strongly and the car was a total credit to its maker – Jody Halse. We didn't have a single mechanical issue and only changed the pads after 21 hours! Despite the car being the second oldest in the race, Jody set the second fastest lap in class and it just kept going and going and was doing fast laps in hour 23! What a credit to Jody and BMW's M department. They don't make them like that anymore."

Ultimately we left the event with a tinge of disappointment that the Z4s didn't win, but with the sound of reverberating V8s still pounding in our chests and the utmost respect to the 250,000 fans who camp out around the track for what must be one of the world's weirdest and wildest 24 hour parties. We'll be back next year and hopefully reporting on the M6 GT3's maiden N24 win which would certainly be the icing on the cake in BMW's centenary year ●



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# WILD THING

The standard M4 is far from shy but AC Schnitzer has proven that it doesn't take a whole lot to turn it into a monster with its ACS4 Sport package

Words: Simon Holmes Photography: Dave Smith





Schnitzer's 'Racing' front spoiler for the M4 is a complex amalgam of parts with a carbon fibre main section to which is added a lower lip and small carbon winglets just ahead of the front wheels. It looks very purposeful and aggressive

When the M4 was launched last year there were plenty of critics, both inside and outside the core BMW fan club, quick to label the latest M car offering as a little soft. On paper you could kind of see their point: there was no roaring V8 engine anymore and although the styling was aggressive it was notably more refined and grown-up. Of course, those who have seen an M4 in the flesh and experienced it first-hand know full well it's a more than worthy successor to the throne in every way. But if further proof were needed, then perhaps AC Schnitzer's ACS4 Sport truly highlights what kind of thinly veiled beast is hiding within. The spoilers and splitters enhance the existing looks, rather than form them, and the M4's hugely capable chassis and carbon brakes soak up the increase in power, to a monstrous 510hp no less, with ease.

All of the parts displayed on this car are available to buy individually or as a package, and there are also alternative 'softer' options for the suspension and aero. But as this very car was due to partake in a German track event shortly after we photographed it, it was in full race mode, with virtually everything from the AC Schnitzer catalogue fitted. There are clearly plenty of changes, both on and under the surface, so we'll begin with the exterior modifications, as perhaps these make the single biggest difference to the car. Upon first gaze in the flesh, the styling certainly bombards your senses. The various spoilers, wings and splitters sprouting out from around the car transform the M4's overall look from mildly mean to entirely menacing. It all looks very purposeful, helped by the beautiful, high quality, carbon fibre finish found on many of the parts. And, of course, virtually everything is designed to have an impact on performance. The complete aerodynamic package featured here improves downforce as well as aesthetics, although Schnitzer offers the kit as individual parts or a complete package.

Starting at the front, there are three stages of aerodynamic aids. It begins with the two lower spoiler elements, which attach directly to the bottom of the front bumper. Made from carbon fibre, these

contoured spoilers enhance the shape of the original bumper design. They bring the car lower to the floor for a more pronounced and aggressive front-end look, whilst still looking relatively subtle.

The next addition is the much more prominent front splitter, which sees the two lower spoilers joined along the bottom with a large, flat, single-piece design finished in gloss black. This aero aid protrudes a good few inches from the front of the car, connected with a single sculptured support in the centre. To top it off, last of all comes the four individual side wings, or canards, mounted on the outside edges of the bumper. These work in conjunction with the splitter to further improve airflow passing by the front end, optimising downforce.

To balance all of that front-end downforce there's also plenty going on at the rear. It begins low down with a central rear diffuser section having been added to the bottom of the bumper. It's actually relatively subtle compared to the rest of the kit and slots in neatly between the quad tailpipes. On a standard M4 this section is usually colour-coded to the car but the carbon fibre finish of the Schnitzer part helps break it up with some contrast, helped here by the bright body colour. The diffuser also incorporates subtle sculptured lines that flow down to the bottom for added style.

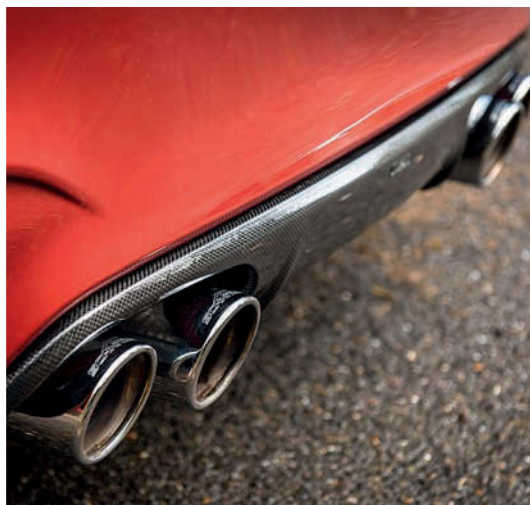
The rear wing, mounted directly to the boot lid, is a lot harder to miss. There are actually two versions of this wing and this one was unveiled at the Geneva Motorshow back in March, but a lower, less extreme version is also available that carries the full TÜV approval required in Germany. The larger one pictured here is generally for export outside of Germany. Named the 'Racing' version, it sits a good few inches taller on raised mountings, although the aerofoil itself is the same carbon fibre item. The additional gurney lip mounted to the very rear of the aerofoil itself has been added only for the aforementioned track event and does not feature on the standard item. Even so, the imposing spoiler balances the large front splitter perfectly.

Working up the car, last of all comes the subtle roof spoiler mounted just above the rear window. This one

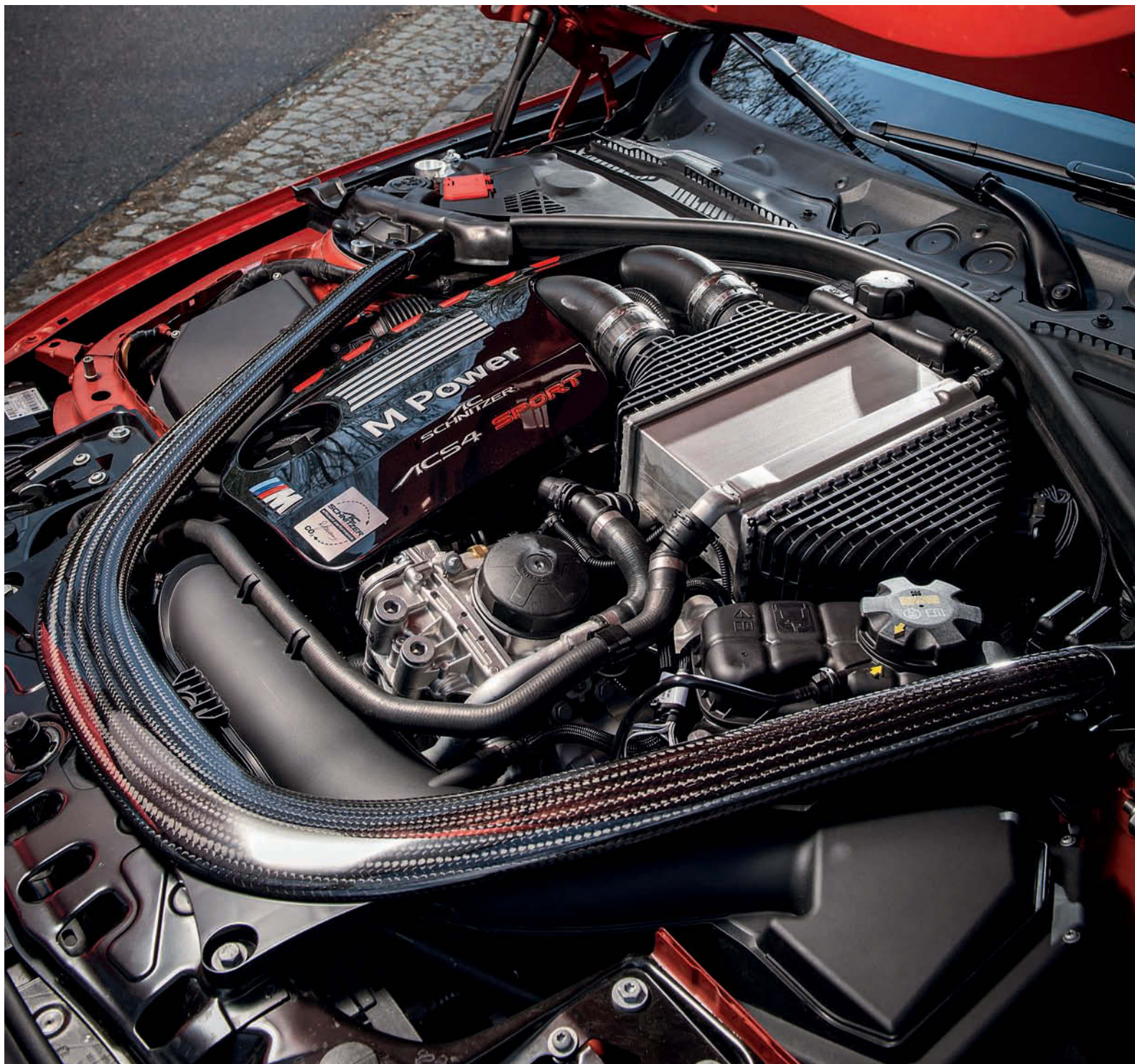


To balance all of that front-end downforce there's also plenty going on at the rear









Schnitzer has undertaken a performance upgrade that significantly increases power

## AC Schnitzer ACS4 Sport

**ENGINE:** Twin-turbo, straight-six

**CAPACITY:** 2979cc

**MAX POWER:** 510hp

**MAX TORQUE:** 476lb ft

**0-62MPH:** 4.0 seconds

**50-120MPH:** 6.2 seconds

**TOP SPEED:** 155mph (limited)

### MODIFICATIONS:

**ENGINE:** AC Schnitzer performance upgrade and exhaust system with valve control and Racing Evo carbon tailpipe trims

**WHEELS & TYRES:** AC Schnitzer Type VIII lightweight

forged in BiColour anthracite. Front: 9x21-inches with 255/30 R21 Continental CSC 5P tyres. Rear: 10x21-inches with 295/25 R21 Continental CSC 5P tyres

**SUSPENSION:** AC Schnitzer adjustable coilover 'Racing' package, lowered 30mm at the front and 40mm at the rear

**STYLING:** AC Schnitzer carbon front spoiler elements, rear diffuser, upper rear spoiler, Racing front splitter, side wings, rear spoiler with higher struts, carbon fibre wing mirror covers, rear skirt protection film

**INTERIOR:** AC Schnitzer aluminium pedal set and footrest, handbrake handle, key holder and floor mats





is easier to miss, especially as it comes matched to the roof skin's carbon fibre finish. It still adds to the overall effect of the rear end package, in terms of both visual and technical, as Schnitzer tells us it further improves downforce and rear end stability.

The last of the exterior changes are the carbon fibre wing mirror covers which simply look good, tie into the other carbon parts and, of course, offer a small weight saving.

Inside, there have also been a couple of small changes in the form of an AC Schnitzer aluminium pedal set and footrest, keyholder, floor mats and handbrake lever. For manual transmission cars there's also the option to add a matching gear knob that features a nifty digital display in the top to tell you what gear you're in. The track event this car is due to attend has also meant the original seats have been replaced with lightweight Recaro items, although the original seat belts remain.

Whilst that concludes the exuberant styling and aero package, the wheels also undoubtedly add to the overall look of the ACS4 and these AC Schnitzer designed Type VIII items are the lightweight forged versions, finished in BiColour anthracite. Whilst the thin-spoke design looks great, it's the size of them that makes the bigger impact here. At the front, they measure a wholesome 9x21 inches and are fitted with 255/30 R21 Continental CSC 5P tyres. Just like a standard car, they're an inch wider at the rear, measuring 10x21 inches with a huge 295/25 R21 tyre. Schnitzer offers several wheel packages ranging in size and design and this is the biggest it offers. Although it does look a tad 'over-wheeled', it compliments the car's spoilers and splitters to give a 1990s Touring-car-esqué look and feel. This is further aided by the suspension changes, which see the tops of the tyres begin to disappear into the bodywork.

That brings us on nicely to the mechanical changes of the car, starting with the lower ride height. This car sits on Schnitzer's 'racing' suspension package, which consists of a replacement coilover setup that lowers the ride height by 30-40mm. The kit also offers adjustable compression and rebound damping for

further fine tuning. Schnitzer says it is "suitable for normal road use, driving courses and track use. An ideal compromise between everyday practicality and motorsport fun".

For those looking for a milder improvement Schnitzer is also offering a replacement spring kit designed for use with the existing BMW dampers. This far simpler package lowers the car around 25-30mm at the front and 10-15mm at the rear. Both suspension packages are sure to offer improved handling as they were developed and tested at the Nürburgring by Schnitzer's own suspension team under the supervision of none other than chassis expert and Touring Car driver, Manfred Wollgarten.

Elsewhere, further modifications extend to the engine side of things. Here, Schnitzer has undertaken a performance upgrade that significantly increases power from 431hp to 510hp, which it makes higher up, from 6000-7000rpm. Likewise, torque has increased from 406lb ft to 476lb ft produced at a raised 4000rpm peak. The increase in power equates to improved performance, with 62mph arriving from rest 0.1 of a second quicker than standard at 4.0 seconds dead. But more telling is the 50-120mph time, which crumbles to just 6.2 seconds, an improvement of 1.7 seconds over a standard M4.

The Schnitzer exhaust rounds off the upgrades on offer, and the system consists of a dual sports rear silencer and sound pipe, which retains the valve control of the original BMW system. There's also an export sound pipe option for a louder note and a choice of either Sport or Racing Evo Carbon tailpipe finishers, the latter of which is featured on this car.

The ACS4 has plenty going on then, from suspension tweaks to floor mats, increased power to improved aero and, visually, it's undoubtedly gorgeous, in a fully functional way. But the proof is in the pudding when it comes to a package like this, and I'm keen to try out the car for myself.

As soon as the photographs are done I grab the keys and nestle into the non-standard Recaro seats. They grip you reassuringly in all the right places, although it feels a little odd not using a proper



Schnitzer's forged rims are lightweight and certainly look the part; ceramic stoppers offer excellent retardation





## The carbon ceramic brakes provide so much confidence you find yourself pushing the braking point further and harder at each corner

harness with a bucket seat like this one. I'm warned the car is in track configuration, which means it's been corner weighted and set to rather stiff suspension settings. Once in position, a press of the button the engine booms into life and I make my way towards the local hillside roads. Immediately it becomes clear that it's actually the exhaust that dominates the driving experience in many ways. The soundtrack it emits has an angry undertone that snarls, cracks, pops and barks its way up and down the rev range. Its aggressive note suits the nature of the car and its sound is addictive; it's fun gunning the throttle and then letting off just to hear the exhaust snap back like a cracked whip.

Burying the throttle also reveals the extra pulling power the car possesses. However, its character has changed slightly. You have to work the engine and gearbox a little harder to really highlight the increase, as the peak power and torque bands have risen notably. It still pulls hard and fast from low down, just like a normal M4, but it feels strongest as it approaches the limiter and clicking back the gearshift

paddle to summon another cog reveals the car is only just getting into its stride in the lower gears. Even so, when stringing a couple of winding hill sections together, despite the slightly damp road, the car squirms a little before catapulting you towards the next corner with savage execution. Thankfully, the carbon ceramic brakes provide so much confidence you find yourself pushing the braking point further and harder at each corner, before turning in and straightening the wheel enough so you can feed the throttle in hard to repeat the process once again.

In this environment the suspension does feel too hard and it's clearly out of its comfort zone as it skips and scrabbles around under power. But body roll is exceptionally controlled and the car feels absolutely rigid, making you feel utterly connected with the car.

I've soon wasted a decent chunk of fuel so make my way back to AC Schnitzer's HQ whilst pondering how devastatingly effective the car must feel on a dry track where it would be able to truly flex its muscles. Despite demonstrating immense capability on these roads as a lightening-quick point-to-point car, it feels a

little too focused for this environment. Of course, it would do, being in track mode, but it would be nice to really sample the full effects of the aero and suspension changes. Perhaps a back-to-back test with a standard M4 for a direct comparison is required, as I suspect the changes here are benefiting me much more than I realise.

Either way, the ACS4 is a monster of a car and the beauty of Schnitzer's package is that the enhancements are, in fact, relatively simple. All are easy to fit, bolt-on parts and yet the car's character, both visually and sensorially, has changed significantly. But then, it wasn't going to take much to unleash the beast within... ●

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# *Meeting the Challenge*

BMW has attempted to answer some of the questions that revolve around the shape of the sports car of the future and with the i8 Mark Williams reckons the years to come will have been worth waiting for

Photography: Dave Smith







Buying and running a new car used to be such a boring process. Dealers provided printed brochures for one to repeatedly flick through, spending days choosing between GL and GLS trim levels. Feeling flush? Opt for GLX and relax in luxurious velour with the decadence of windows which operate electrically. Go see your bank manager, beg, steal and borrow, leave your soul in their safe as you exit the building and a month or so later your shiny new box appears on your drive, properly PDI'd if you're lucky. You'll be back in two months when something falls off of course, but that's your fault for getting *that* model from *that* dealer...

Badges affixed to the rump clearly informed your jealous neighbours upon delivery not only of the motive power chosen, but whether you did indeed opt for the 'top of the range' specification and ergo whether you'll probably be caravanning this year and not going to Spain as last year. Out on the road, those same badges served as a warning to other road users to not dare attempt lighting it up away from the traffic lights and those with inferior specs needed to follow at a respectful distance. One fed it from the green pump at the filling station, and anybody using the black pumps were either off to the lower field that evening to sort out the drainage or were heading for their next truck stop.

So at this point let's take a moment and give thanks for progress, because the world changed. But here's the thing. The utopian view (i.e. the one we can't have) is a specific mix of some of the way things *used* to be, with a strong mix of the way things are *now*, and will continue to be because thankfully, you can't halt nor prescribe progress.

What does that mean? Well, somebody somewhere invented the PDF format and now everybody is expected to download a virtual brochure (urgh) then swear loudly when they realise they first have to charge their tablet or even 'update it' in order to read it. There are almost as many options to finance a car purchase as there are actual manufacturers to choose from and nowadays you can go to something called a 'supermarket' to buy a car. And model naming nomenclature has taken on its own language, it now being virtually impossible to decipher spec levels or engine power from the badge alone. The only reason, of course, that this is still seen as an issue is because people who whinge about it (like myself) remember the 'good old days' when a 1.6 GL was actually what it said on the bootlid. But in actual fact, those days weren't that good and today's buyer is much better served.

Despite the confusion of choice, the myriad of financing options these days open up more possibilities to more buyers, and if we ignore for the moment the awkward subject of governments wanting the public to be financed to the hilt because it keeps them in work and off the unemployment register, that can only be a good thing. PCPs, cheap leases, low APR bank loans etc all ensure that even the terminally short of cash can still afford something half decent to potter about in.

This is a good thing too, because nowadays the products on offer are simply breath-taking. You can buy a hot hatch for around £30k in the shape of a VW Golf which has four-wheel drive, goes like the clappers and will never break down. BMW will entice you into its dealerships with the promise of lairy rear-drive handling within the same segment in the shape of the M135i. You can buy a circa one tonne roadster in the shape of an MX5 (much as I love BMWs, I'd have the Mazda all day long) or you can drop a couple of grand on a relaxing Five Series and waft around for about 400 quid a month. The motor





moguls have really responded to the need for choice whilst at the same time answering the demands of the legislators who tell us we can only have fun if we do so considerably.

So the manufactures have satisfied the yearnings for mere transport whilst at the same time loving the planet. They have given us diesels with blown aspiration which pins your head back upon mashing the throttle. And 50mpg. They've made petrol engines go further on a gallon than ever before, whilst at the same time lopping off a cylinder or two. They've married said internal combustion up with battery packs and offered up products which pad silently around the city for dozens of useable miles. They've generally proven that technology, correctly applied, can overcome just about anything.

But people also need sport in their lives. Titillation, something beyond normal. They need sleek styling, a ground-hugging stance and seat-pinning performance. So BMW responded with a 'we can do that too' answer in the shape of this, the simply astounding i8.

I wasn't sure what to expect last year when I drove the BMW i3, the first full EV to emerge out of Munich. What I got was neck-straining shove off the line, a refined ride which was surprising in something so small and a distinct awareness of not missing the sound of internal combustion as we whizzed around the countryside. But we also got four fully useable seats, a decent boot; a range which at least acknowledged the existence of the real world, and dynamics which adhered faithfully to the BMW ethos. In short, it was mighty impressive, even more so considering the price point and the fact it needed to appeal to a mass market.

So expectations were high for the i8. What could BMW deliver for a higher price point, and a more specific demographic? Porsche's 911 dominates the market for £100k two-plus-two-cum-sports cars (although it's a market which is a good deal narrower

than it used to be, thanks to the inexorable rise of the SUV) and like it or not, the i8 would have to compete with the 911 on at least *some* dynamic level in order to avoid being seen as nothing more than a curio.

It takes a mere five minutes after leaving North Oxford BMW's Wolvercote premises to appreciate what BMW has done here. It's produced motoring alchemy. This is a GT car with real sporting ability, something which can arc down a motorway in style and authority, then peel off into the hills and dissect the mountain pass route with disdain. It satisfies the modern-day demands of performance and economy, achieving that magical mix of appealing on all levels, including the desire to emit a decent noise, which we'll come to later. So, what exactly do we have here?

Nestling in what BMW refers to as an Aluminium Drive Module, and producing a combined output of 362hp and 422lb ft, is a three-cylinder, Twin Power Turbo, petrol-fed and forced induction engine combined with a 96Kw (131hp) electric motor. The former sends its power through a six-speed automatic transmission to the rear wheels, and the latter through a two-speed 'box to the front wheels. So yes, this is a four-wheel drive chassis. This marvel of modern technology is attached to a carbon-fibre-reinforced plastic (CFRP) passenger cell and the resultant minimal weight is enough to see the whole ensemble streak to 62mph in a minimalist 4.4 seconds, or one can choose to dial things back a little and whistle along at 75mph for up to 23 miles on electric power alone. EfficientDynamics rule and brake energy regeneration, Eco Pro mode, electric power steering and a weight-saving regime which extends to constructing the doors out of CFRP-aluminium all assist in either saving weight or eking out the economy. Magnesium features in the supports for the (fully electronic, and of varied appearance depending upon prevailing driving mode) dashboard and the overall impression is of a car

stuffed full of technology and the very latest thinking. The aim? To extract maximum go and ability for minimal energy expenditure. And look good whilst doing it.

I could talk about the technical highlights all day long, but we don't have the space. So, time to drive. And let's start with the noise, which is simply magnificent. On a subjective level, this one splits opinion. Yes the noise is augmented through the speakers. And no, I really don't care. I used to, and I've moaned about this in these pages in the past. But the fact is, modern motoring demands are forcing the manufacturers down this route, and as motorists we either have to accept that and move on, or trundle around in ancient GL or GLS-badged motors as time passes us by. I'd know which I'd rather choose, and the i8 does its best to ease the transition into this new audible binary world. Under power (and in Sport mode on the Drive Experience Control switch, which runs the engine all the time) there is a simply gorgeous metallic timbre from behind the cabin along with a lovely jet engine-esque whine from the front-mounted electric motors which seeps back through the bulkhead, before the two noises mix and wash around the interior.

It sounds expensive, energised and engineered, and it gets better. Wind the motor out to 6k then flick for a change and the *whumpf* which emits from the speakers adds soul to the beast. It's not long before you're utterly immersed in the experience, appreciating the noise for what it is, not where it comes from. Last point – in the i3, the noise from the electric motors, which are rear-mounted of course, tends to get sucked up into the slipstream, whereas in the i8 the motors are front-mounted; ergo, they contribute to the aural experience which one assumes is the point.

If there is a criticism of the noise, it's in the obvious programmed response to gear changes, particularly in the downshifts, which always elicit the same type of



It's not long before you're immersed in the experience, appreciating the noise for what it is, not where it comes from





## i8

**ENGINE:** Three-cylinder, 12-valve, twin-turbo

**CAPACITY:** 1499cc

**MAX POWER:** 231hp @ 5800rpm

**MAX TORQUE:** 236lb ft @ 3700rpm

**ELECTRIC MOTOR:**

**MAX POWER:** 131hp

**MAX TORQUE:** 184lb ft

**0-62MPH:** 4.4 seconds

**TOP SPEED:** 155mph (limited)

**ECONOMY:** 135mpg

**EMISSIONS:** 49g/km

**TRANSMISSION:** Six-speed automatic

**STEERING:** Electric rack-and-pinion steering

**SUSPENSION:** McPherson Struts (front), five-arm multi-link (rear), electronic damper control

**WHEELS:** 7.5x20-inch (front), 8.5x-20-inch (rear)

**TYRES:** 215/45 R20 (front), 245/40 R20 (rear)

**PRICE (OTR):** £104,540 (before government grant)







reaction, and to the same volume. But I never tired of it, even if continuously running around in Sport mode just so that I could enjoy the noise does undermine the point of having a hybrid in the first place.

It didn't undermine the economy, though, and on the run to the rendezvous point with editor Harper and snapper Smith in the former's M635CSi, the i8 was reporting 44mpg, dropping only fractionally down to 38mpg later in the day whilst chasing (or trying to anyway, crikey he can pedal a bit...) Bob around the North Oxfordshire lanes. Yes, yes, I know that's way less than BMW's claims but come on; we all know the government figures aren't worth the paper they're printed on so get over that and appreciate what 362hp and 40+ mpg actually mean in reality.

Whilst Smithy gets busy with his cameras and filters, and once the dust and debris have been cleaned off the i8's lines, it gives us the chance to stand back and appreciate the design. Striking at first sight, especially from the front three-quarter angle, the impact soon softens and you're left with an impression that the design is a brilliant success. Subjective again of course, but to my eyes at least, it occupies the middle ground between standing out from the crowd and trying too hard. The same is true of the interior, which on first acquaintance is a riot of angles juxtaposed with curvy lines. But then you spot

the familiar BMW air-con controls, and the iDrive switch, and you start to relax. Then you realise that the auto shifter is the same as on any other BMW and the 'hard points' in the cabin such as the rake of the windscreen, and the position of the seats relative to the steering wheel are all very familiar BMW fare. And then you really relax, and the i8 allows you to maintain that composure as you venture out for another drive.

You really could live with one of these things every day of the year. It's quiet and comfortable, it will amble around town without histrionics and generally demand very little from you. There's an easy going and relaxed feeling to its progress and it's not until you start to explore the performance envelope a little that the i8 demands more of you, which is exactly as it should be. Away from the line, there's a slight delay before the big spool up but this lasts a nanosecond before the i8 rockets away, minimal inertia and instantaneous torque combining in one, long linear lunge forwards. You're flicking through the gears, hearing that three-pot wailing away behind, picking out the rev counter racing around the dial in the corner of your eye before the corner rushes at you through the windscreen and you're on the brakes. Speed washes off as you downshift, each time accompanied by that delicious throttle blip as you

peel into the bend, the dashboard flashing up a note informing you the i8's brilliant brain is scavenging electricity as you decelerate (although the effect here is not as pronounced as it is in the i3).

Ideally geared, direct and faithful in its response, the steering could perhaps benefit from a little more weight for this kind of work but what's most impressive, and surprising, is the absence of understeer considering the narrow-section 215 front tyres this example wears (245s out the back, all rolling on 20-inch rims), doubtless a by-product of the front-mounted electric motors sucking the nose around the apex. So you tack through the corner, all the while aware of the fact that despite copious body roll it's demonstrating, that pesky M635CSi is still looming large in the mirrors. Up the ante and the front will eventually start to wash wide, but by this point you're travelling at a fair lick and I doubt most owners would wind their i8s up to this extent on the public highway. And yet Bob is still there in attendance... There's not much in the way of steering feel either, but as I think I've said previously, we need to stop mourning that and accept the fact that it's a thing of the past.

The stiffness of the CFRP structure is proven by the ride quality, which is just on the right side of firm. But despite the occasional surface imperfection sending a





shudder through the suspension, the structure is incredibly tight and rattle-free. There is complacency in the ride but you're never left in any doubt that this is almost as much sports car as it is GT cruiser. Riding on its electronic dampers, the stiffness in the ride combined with those 20-inch rims and the carbon tub probably contributes to the road noise levels, which are high enough to be noticeable whilst not being overly intrusive. Again, it's evident here that there are some clear sports car genes running through the i8's DNA. This is also evident in the throttle response. No, it's not razor sharp, and it was never going to be considering the forced induction. But it's incisive enough for road work and one expects would suffice for nine-tenths of the time.

Inside, fault-finding equates to nit picking, but ultimately I'd like the auto shifter to be a little closer as it's a reach with the seat set for a six-footer, and the seats themselves could do with more lateral support when one is attacking the bends in a way

that this car is so very easily capable of. The dashboard itself as implied earlier is a riot of electronics and impressively busy displays. On the left, a digital reproduction of an analogue speedometer around the outside has a digital speed readout at its centre, and it's this one tends to read from as the speed ebbs and flows. And on the right, a second electronic gauge depicts engine speed in sport mode or battery recharge capability in Eco Pro mode. It's incredibly slick, visually engaging and very impressive. It's not overly distracting either, which is really important.

There are other distractions, though, and chief among those is the infuriating proximity sensor, which beeps like crazy as you approach the rear of vehicles or pedestrians in front. The downside of silently rolling around without an engine. Still, at least you can switch it off. There isn't much else I would change though and this again sounds like nit picking.

If you test drive an i8 and an M6 and you opt for

the latter, whilst I respect your decision because at the end of the day a car purchase is a subjective thing and not something where logic or rational thinking necessarily have a place (and even more so at this level) then you're something of a dinosaur in my view. If you purchase the i8, then you're looking to the future and accepting the fact that motoring will change in years to come.

Ultimately, along that challenging B-road we all traverse in our dreams, the stereotypical Porsche 911 will pull away, but that's missing the point. A well-known journalist said recently that the i8 demonstrates where we're going, and cars like the M3 (and the 911 too, I would venture) demonstrate where we've been. Cars are very different now to how they used to be, and the i8 is at the forefront of another shift in approach which will hopefully result in yet more varied and intriguing product as the years go by. Providing it doesn't necessarily mean more of those blasted PDF brochures, I'll be happy ●

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# BALANCING ACT

It's all too easy to get it wrong when it comes to modifying a classic but we reckon Tong Phan's 2002 has nailed that perfect balance...

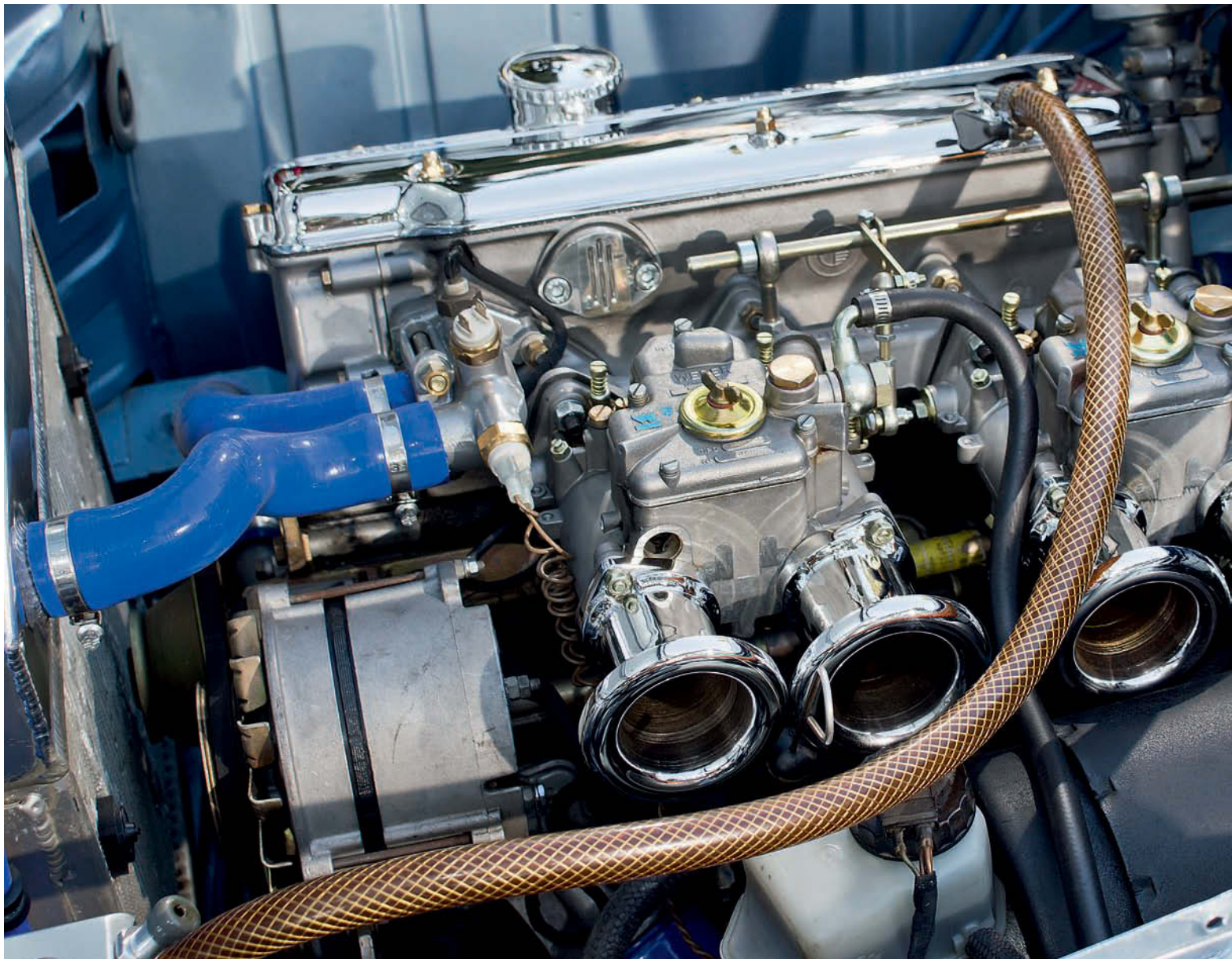
Words: Simon Holmes Photography: Kevin Raekelboom











It's important to find the right balance when modifying a car. It's all too easy to lose track of that although it helps when the basis is something as naturally well-rounded as a classic 2002. This stunning example, finished in its original shade of Fjord blue metallic, certainly strikes the right balance. From the outside its clean-cut styling is a lesson in minimal execution and maximum impact, finished off perfectly with some showpiece, chrome plated split rims. But perhaps its crowning glory is that despite its perfect appearance, the car is no show queen. Lurking underneath the highly polished surface is a modified M10 engine and thoroughly reworked underpinnings to match...

Perhaps unsurprisingly, the car's owner, Tong Phan, isn't a resident of UK soil. Instead, he's based in the sunshine state of California and as a profession works for VIP Modular Wheels, a company that manufactures aftermarket high-end bespoke wheels. Being involved in the industry Tong has owned plenty of project cars over the years, although mainly Japanese based and all of which tended to follow the same set path. "I've been around cars since a young age," recalls Tong. "Something about modifying them just keeps my blood pumping and I can't seem to leave any of my cars alone. All of my builds have

been overboard and heavily modified to a point where I couldn't even drive them on a daily basis. My other problem was that I would quickly get bored of them and lose money selling them on."

With that confession in mind, you might well think Tong has fallen into the same old trap here but you'd be wrong. This 2002 is different. This time round he's in for the long haul, which is why he chose a classic car in the first place. Of course, his good friend, Le Tran, who owns 2002 Garage Werks, a classic BMW restoration specialist in California, helped guide him towards the 2002. "Le had been telling me to get away from car builds that were a complete waste of money in the long run. He was absolutely right but at the time I wasn't ready," admits Tong. "As the years went on, I began to think more seriously about taking on a classic car build, something I could keep for a long period of time and also enjoy every day. I turned to Le for advice. He had been educating me about BMW 2002s, how they had become more collectible and how I should enjoy my money more wisely. I agreed but I wasn't completely sold on a 2002. My first choice was to build a BMW E9 or a classic Porsche 911. But after an extensive talk with Le, he made my decision easier. Besides, he knew 2002s like the back of his hand, he had parts readily

available, and he was able to sponsor my car because of the extent of modifications I had planned for it."

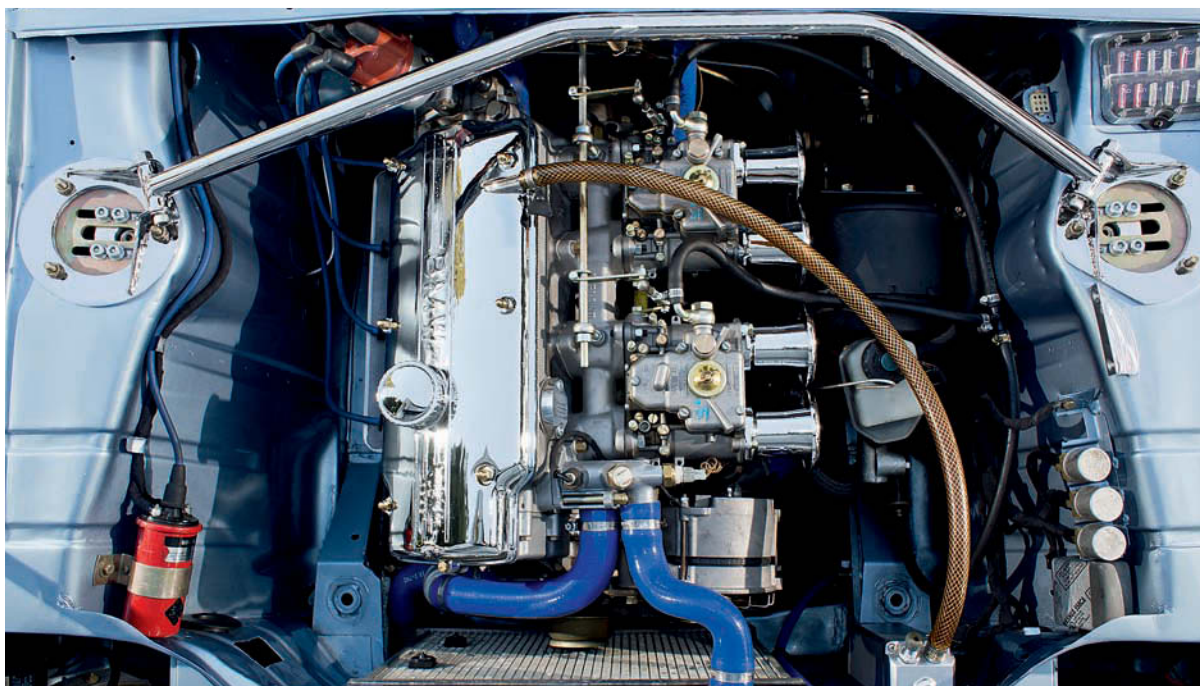
Thankfully, Tong didn't have to look far for a suitable car either. Le happened to have the perfect 2002 in mind, a car originally destined for his own girlfriend before plans changed. A very original car, the Fjord blue 2002 had spent its life in California, which meant it was also rust-free. "Le had just got the car back from the paintshop and invited me over to take a look at it. I immediately fell in love with it. I loved the colour and the fresh paint job saved me a few months of time. Those that know me well also know that I love instant gratification, so we made a deal and went forward with the build," says Tong.

Work began immediately without even leaving Le's workshop and, being an organised and motivated man, Tong had a firm plan of action in mind. Not wanting to follow his usual set ways, the 2002 had to remain totally usable above all else. But he still wanted to do something different from the rest and, as you can tell from the finished product, things had to be done properly, even it meant going further than he meant to in places. "Even though I was new to the 2002 scene, I did my research and saw a ton of 2002 builds that looked exactly the same. The 2002 scene locally is filled with purists that want to keep





The engine bay on this 2002 looks absolutely wonderful but also packs a meaty punch thanks to plenty of internal upgrades



## 1975 2002

**ENGINE & GEARBOX:** Rebuilt M10 with 1mm oversize pistons, 9.5:1 compression ratio, H-beam rods, ARP mains and rod bolts, blueprinted and balanced, 292 billet cam, adjustable cam sprocket, stainless steel intake and exhaust valves, heavy duty rocker arms, springs and retainers, uprated valve guides, Viton valve seals, matched intake and exhaust ports, chrome valve covers, twin-Weber 40 carbs, Ireland Engineering DCOE intake manifold, aluminium radiator, 4-1 exhaust manifold and system, Getrag 245 five-speed gearbox, lightened flywheel, 228mm clutch kit, M3 pressure plate, short-shifter kit, 2002 Garage Werks stainless steel billet dog bone, tower plate and crossbrace

**CHASSIS:** 2002 Garage Werks camber plates and coilovers with custom springs, chromed Roger's Tii strut bar, Ireland Engineering anti-roll bars

**BRAKES:** Wilwood four-pot big-brake kit with vented two-piece discs, 2002tii master cylinder, brake booster and rear cylinders

**WHEELS & TYRES:** 15-inch BBS RM wheels, fully chromed, 24k gold plated billet hex caps, Toyo R888s

**INTERIOR:** Nardi wood steering wheel and matching shift knob, 2002tii dashboard, Gobi Tan trim by World Upholstery, Esty blue and tan carpets, Fuzz Fabrics shift boot

**EXTERIOR:** Respray in original Fjord blue metallic, Euro turn signals, front and rear bumpers, Talbot Berlin mirror

**THANKS:** Thank you to my sponsors: Le Tran of 2002 Garage Werks, Stan and Karl of Toyo Tires, Toni, Matt and Woody of Hi-Tech Metal Polishing, David and Lee of 714 Tires



Tong didn't go too far with the interior and it looks all the better for it with the retrimmed seats and door cards looking just perfect



originality to their builds and there's nothing wrong with that," he tells. "In fact, my original idea was to keep the car as original as possible but with Euro inspiration. As the build went on, though, I fell more in love with the car and have gone a little overboard. I wanted the car to look classy but when you popped the hood, you wouldn't think that there was a built motor under there. Or if you looked past the fancy chromed wheels you wouldn't think to find a Wilwood big-brake upgrade. In the end, I just wanted to build a 2002 the way I think they should have come from the dealership."

High on the agenda was a power increase, as Tong was keen to ensure the 2002 would hold its own on the road in modern traffic. At first he considered the obvious S14 engine swap before opting to keep things original and retain the existing M10. But to get the most out of it a full engine build commenced, incorporating plenty of tasty upgrades to keep things interesting, from upgraded internals to twin-Weber 40mm carbs. The accompanying drivetrain also

received a revamp, starting with a 245 Getrag five-speed gearbox conversion for added drivability. The suspension and brakes were both overhauled and a low but sensible ride height was set using coilovers, camber plates and custom springs supplied by Le, coupled with upgraded anti-roll braces.

However, it wasn't just a matter of fitting a selection of upgraded parts; it had to look the part, too. So to maintain the high standard all areas received extra attention. "I wanted the car to look classy so I chrome plated a lot of parts that normally others wouldn't consider, thanks to another sponsor, Hi-Tech Metal Polishing of Anaheim California."

When it comes to chrome plating, it's hard to ignore the wheels, which were imperative to the build. For Tong no other wheel would do except these genuine BBS split-rims. "The wheel choice was going to make or break the car," he tells us. "I was always a fan of the classic mesh BBS RS and I wanted to keep the wheels period-correct. But when Le introduced me to the rarer BBS RMs he had in stock, I was sold. I

knew they were hard to find and I also did not like the fact that BBS RSs were being copied by several companies. So the RMs were an easy choice for me."

When Tong first got a hold of the wheels they weren't looking quite as mint as they do now, as the centre caps were missing and the original finish was worn and weathered. Not one to be deterred, Tong was able to source brand-new old stock parts from Germany, while the plastic centre caps were replaced with custom billet aluminium items. "I knew I had to get them since I wanted to have them 24k gold plated. I wouldn't have been able to do that with the original plastic caps."

Tong got involved along the way with the build, despite not knowing a whole lot about the 2002 at the time, but that soon changed thanks to Le's invitation to come and help at the workshop. "I was at his shop almost every weekend learning and wrenching. I knew nothing about 2002s at the time," remembers Tong. "He taught me a lot about these cars along the way with some hands-on training. Le







**“I just wanted to build a 2002 the way I think they should have come from the dealership”**



really knows his stuff.”

The build took around two years to get to this stage and, needless to say, Tong is very pleased with it so far. True to his word, it's driven on a regular basis. “I love it. I drive almost everyday, as long as the weather permits. It's not the fastest car but it puts a smile on my face every time I drive it. My wife and I also take long trips in it. For the past two years, we drove it from Southern California to San Francisco for the Bay Area 02 Swap & Show, a seven-hour drive. From there we drive even further into Napa Valley, which is known as wine country, where we visit our favourite wineries. What better way to enjoy a cruise through the wineries than in a classic car?”

Tong also enjoys the reaction the car gets from people around town: “Most people don't know what it is or have never seen this model. However when I do bump into someone that knows what it is, it usually puts a huge smile on their face and we have a great conversation. That is the greatest reward for me. Here in California it's rare to see a 2002 on the streets and when you do they're not in good condition. It's a great achievement to have one that's restored back to its original condition. But to see one that is highly modified, it's a real treat. I feel very honoured to have been selected for this feature and privileged to have such a supportive wife.”

Although from the outside this build appears to be

complete, it isn't quite finished yet as, even at this stage, Tong has plenty of plans for the car. These range from making it even more usable to improving that clean-cut look further still: “It's never-ending for me and I still have a lot of plans for it. I have more engine and interior parts to chrome and also need to add air conditioning so I can drive it during the hot months here in California. I would also would like to pull the motor out to hide all of the wires, then shave and respray the engine bay so it's uncluttered.

“For the outside, most of the trim pieces are being chrome plated at the moment. I found that over time the original high polished and anodised trim pieces fade, so I'm going the extra mile and chrome plating them. That's about it for now... although I was thinking about installing a nice air-ride system with hard lines and AccuAir management, although that's still up in the air.”

It sounds like there is plenty more to come for Tong, especially as he also has another BMW in the stables that he has been busy building, this time an E30 M-Tech Convertible intended for his wife. “She's always loved the E30 Convertible and it would be nice for her to cruise up and down the local coast in the summer in one.”

We can only imagine how that one will turn out but, going by his 2002, we've got a feeling Tong will again nail that perfect balance...●



# WHAT'S IN YOUR GARAGE?

**After a 20-year wait BMW E3 enthusiast David Maughan finally got his hands on the car of his dreams. Here he talks to us about the thrill of owning a 3.0Si**

Words & photography: Mike Taylor

Work began on the first generation of new BMW engines, the in-line four cylinder units to replace the ageing 700 Series, in the early 1960s, designed by powertrain engineer Alex von Falkenhausen and his team. Critical features were a single overhead chain-driven camshaft and a cylindrical block with exceptional strength and size, capable of being extended to increase its cubic capacity later. To overcome the unit's height, the engine was installed at an angle, canted over for a lower bonnet line, a characteristic which became common practice in BMW power train installations over the years.

It was an inspired concept and laid the foundations for the next generation of BMW engines, the straight-sixes, which over the years generated a deep-rooted reputation for power and smoothness. Initially, the straight-six would be used in the E3 Saloons in 2500 and 2800 capacity and the coachbuilt Karman E9 Coupés, first appearing in 1968 as the 1969 model year cars, the larger engined model boasting better quality trim level as befitting its improved performance.

The straight-sixes used a crankshaft which rode in seven main bearings while carburetion utilised twin dual throat Zenith/Solex. The aluminium cylinder head utilised two valves/cylinders in hemispherical-type combustion chambers. In 'cooking' level tune the 2.8-litre engine produced 64hp/litre, an impressive output when for most manufacturers of the day 50hp/litre was reckoned to be more than acceptable. Underneath, the car utilised all independent suspension with MacPherson struts at the front and BMW's semi-trailing arms at the rear.

Transmission options included a four-speed manual or a three-speed automatic version, both 'boxes being supplied by ZF.

Designed to fill the gap left by the last of BMW's large saloons the 2500/2800 E3 models, accompanied by the stylish E9 Coupés, provided BMW's salesmen with a mouth-watering collection of upmarket models with which to tempt buyers who wanted elegance and performance.

The introduction of the E3 3.0-litre versions, the 3.0S and the injected 3.0Si in 1971, elevated the Saloon (and the Coupé E9 version along with it) into an altogether different category. *Autocar* magazine was quick to point out in its short road test report of the 3.0Si in December that year that 'standards of performance can be hard to keep pace with so much so they leap ahead at times. BMW has always been a trendsetter in this direction and











the introduction of the latest 3.0-litre is nothing short of spectacular.

By replacing the carburettors with Bosch electronic fuel injection BMW hiked the 3.0 litre's horsepower by a further 20hp, to 200hp, and while this doesn't seem a major increase it was the Jekyll and Hyde nature of the car that so appealed; happy to respond with finesse to light throttle openings yet leaping forward with a satisfying surge and aggressive exhaust growl when pressed, covering the magic 0-60mph in just 7.4 seconds and going on to peak out at 132mph. 'In terms of performance, BMW has taken the 3.0-litre saloon car records by storm', added *Autocar*. 'Because it looks so innocuous the Si is something of a Q-car extraordinaire, which can out-drag almost any car on the road yet, when the occasion demands, potter around like the smoothest limousine,' concluded *Autocar* in its brief analysis. 'Above all it is a driver's car and in many ways we rate it as the ultimate in the five-seater category.'

No wonder BMW enthusiast David Maughan has been a lifelong fan of the marque and model. "I was 14 years old and the first E3 I saw was owned by a friend of my father," recalls David. "He was the kind of person who had the latest everything and he'd just bought it from a dealer in Cobham, Surrey. The car was a 2500 finished in Chamonix white and it was parked in his garage. It spoilt the rest of my day because I just wanted to have a closer look."

From then on David says his first objective was to try to encourage his father to buy one, but BMWs in the late 1960s were expensive cars and he thinks his father felt an E3 was not for him. "At the time I was tinkering with the family's BL 1800 Land Crab and I realised the BMW was something totally different," he tells us. "However, my father did buy a BMW 2000Ti. This meant we'd climbed onto the BMW ladder, which was the important thing. And while the 2000Ti did not have the pace and the up-to-date design of the E3, it did have the same engineering qualities. I recall thinking that one day I was going to have one of my own. In the event I had to wait until 1994."

"My first drive in a 3.0Si, one of the first in the country, and finished in Polaris silver, was owned by the friend of my father who had bought the 2500 a few years before," explains David. "By that stage I had just passed my test. He lived on a private estate and he let me drive it up and down on his land." David was instantly hooked. It was all about the sound, the smell, the feel and the engineering; the Si ticked all the boxes.

"But, as time went by, BMW E3s went out of my mind as I became bitten by tuning my Mini within an inch of its life," he continues with a grin. "Then, one day in April 1993, I saw an article in *Classic & Sportscar* magazine in which motor noter Martin Buckley compared a Daimler Double Six Vanden Plas, a Mercedes 300SEL and a BMW 3.0Si under the title

'The Big Boppers'. Initially acknowledging that pitting the V12 from Coventry against the mighty Mercedes was nothing new, adding a 'wild card' (Buckley's expression) like a BMW 3.0-litre took the task of meaningful comparison to a whole new level: 'Yet we've forgotten too quickly what remarkable machines these big BMWs were,' he remarked. Performance-wise, the Browns Lane bruiser and the stag from Stuttgart were ahead on points. However, in terms of styling, it was the Daimler which came out on top, the austere BMW coming last of the trio. Yet, in the final analysis it was the magic of the Munich motor car that caught Buckley's heart, its performance, handling and above all, fuel consumption which brokered the deal. It was a powerful recommendation.

"Having read the article I realised I had to have one," says David. Flicking through the magazine pages he had a stroke of luck; the BMW 3.0Si he'd just read about was for sale through Tony and Barney Halse, then at Munich Legends. A quick call and the car was his! "When I saw it I was amazed; it was totally a time-warp car, with just one owner from new and full documentation," David reveals. "There were, and still are, a number of E9 Coupés around but at that time the E3 was comparatively unloved, so I thought I'd better buy it in case I never found another in this condition. It had my name on it."

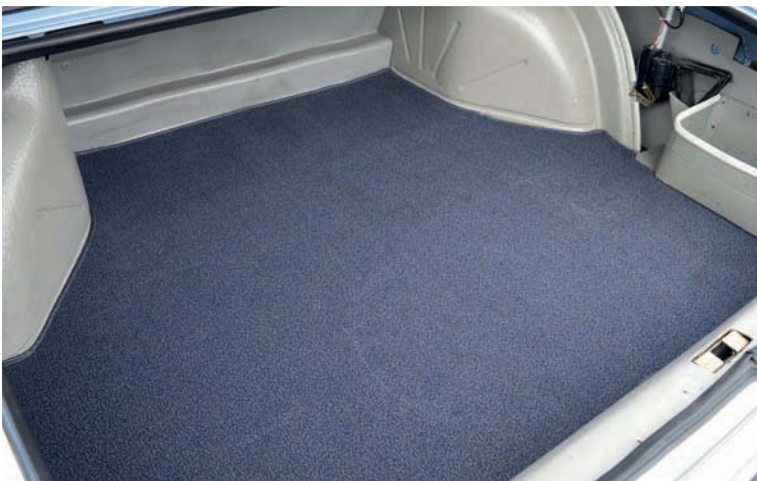
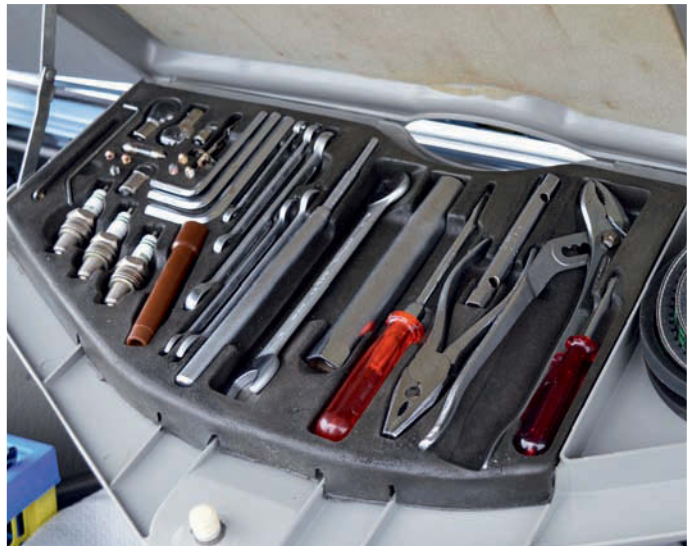
Climbing back into an E3 after a gap of 22 years





**"I thought I'd better buy it in case I never  
found another in this condition.  
It had my name on it"**









**“I’ve parked surrounded by a whole load of other motoring exotica and it’s interesting the degree to which my BMW receives attention”**

David was both invigorated and yet realistic about how the BMW performed. He explains: “From the time when I drove the Polaris silver car at the age of 17 to driving the car which was featured in *Classic and Sportscar*, automotive technology had moved on considerably. So, it’s not surprising when you get back into a ‘70s car that you notice things, such as the wind noise and the large glass area. That said, in many ways the car exceeded my expectations because it doesn’t have electric motors to power the seats or windows, so for its size it is very light, and with 200hp it still felt very quick and didn’t disappoint.”

At the time BMW’s marketing of the 3.0Si gravitated even more strongly towards the sporting motorist who could afford its price tag and enjoy its performance. In a full page advertisement showing the car set against a background of an Apollo moon rocket perched precariously on its launch pad the copy read: ‘Unlike some luxury three-litres, the BMW isn’t an extravagant decoration. It’s a powerful sports saloon that earns its keep in the nuclear power age.’ Another interesting marketing ploy was that 3.0Sis were used by the Traffic Division of the police, one of the first non-British cars to be selected under the notion that it takes one to catch one. Later, in their

conclusion of a long-term (22,000-mile) test report of a 3.0Si *Autocar* remarked: ‘All things considered, though, this BMW more than all the rest deserves all the keen following it has found among owners and we count ourselves in that enlightened band.’ High praise indeed.

“I don’t drive it that often. Indeed I don’t drive it enough,” acknowledges David pensively. “But every time I do it never fails to impress. One of the lovely things about my 3.0Si is that despite being kept in winter storage for about five months, once I’ve started it and got it out and on the road in the spring, within a short distance I’m doing 70+mph and everything is as it should be. BMW gave it that level of engineering integrity. That said, one must be mindful of its age. For example, the Bosch D-Jetronic fuel injection system is pretty crude by today’s standards and uses a high pressure fuel rail. The hoses are prone to crack, although if it’s maintained correctly it will be reliable.”

One aspect that has helped the longevity of David’s car is that the first owner was an engineer who worked on submarines and took a great deal of time looking after it, including rust-proofing the body. All that care and consideration has paid dividends.

Eating up the miles at the legal limit four up with a

full complement of luggage has enabled David to enjoy his 3.0Si on many cross Continent excursions. He’s also enjoyed driving it to Le Mans on several occasions. “I’ve parked in the Blanc grand stand car park surrounded by a whole load of other motoring exotica and it’s interesting the degree to which my BMW receives attention. They are becoming quite rare,” he says.

When it comes to servicing the E3 is relatively easy to work on though David does acknowledge that with 85,000 miles on the clock the engine would benefit from a rebuild at some stage. “Values of E3s have not been especially high and rust is a consideration since owners may not want to spend more on repairs/restoration than the car is actually worth,” he concedes sagely. “However, values are beginning to rise significantly and recently they have broken the £15k ceiling as people begin to realise their capabilities.” Clearly, David enjoys a happy relationship with his BMW and plans to continue basking in its performance for many years to come ●

*Thanks to David Maughan and Barney Halse of Classic Heroes ([www.classicheroes.co.uk](http://www.classicheroes.co.uk)) for their help with this article.*





# What's involved? Wheel Fitments

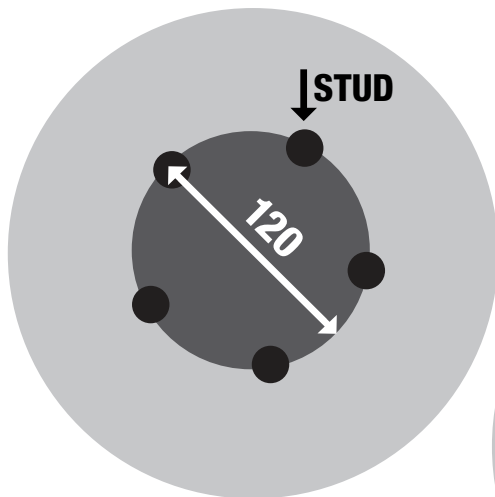
Fitting a set of wheels is very common but that doesn't mean it's easy as there is far more to consider on a new wheel than simply its looks...

**Words:** Simon Holmes

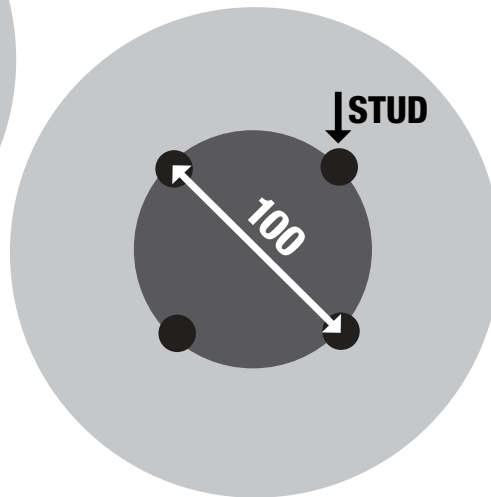
**W**hen it comes to fitting different wheels to your car, there's what you might call a bit of science behind it. Whether you're choosing brand-new aftermarket wheels or trying to fit a used set from another car, it's not quite as easy as it sounds like it should be, as there are plenty of pitfalls to be aware of. BMW made it a little easier by keeping

to only two major bolt pattern fitments, but that still doesn't mean any wheel from any other BMW of the same year or type will fit on another. That's why it's important to know what the key measurements mean before you spend money and realise the wheels you liked the look of have no chance of fitting your car. So here's what you need to know when it comes to choosing, or changing, your wheels.





PCD OF 5X120

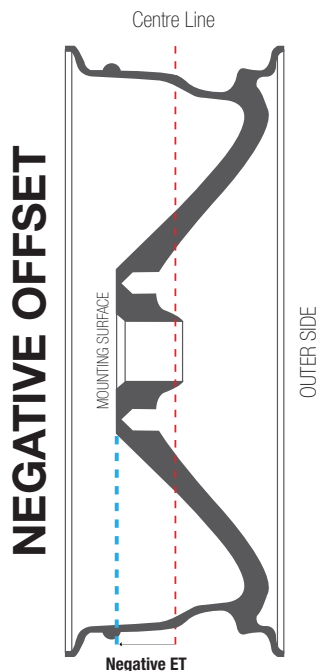


PCD OF 4X100

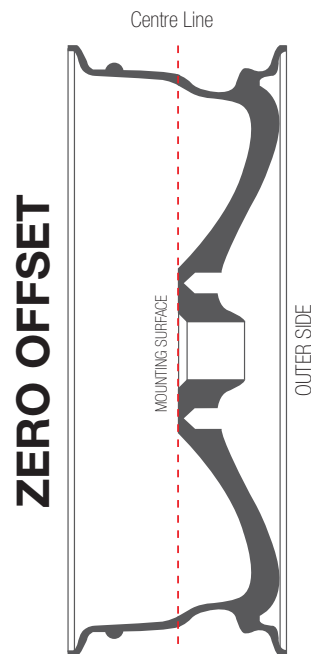
## PCD

The Pitch Circle Diameter (PCD) is often referred to as the bolt pattern, and this is the first thing to check on a set of wheels. As the name suggests, the PCD relates to the bolt holes drilled into the centre of the wheel and the measurement simply denotes how many bolt holes there are and the distance between them. All recent BMW models use a 5x120 pattern, which means there are five bolt holes and they are spaced 120mm apart. Earlier BMWs, such as the E30 3 Series, used a 4x100 pattern but other than that all BMWs use the same PCD. No other car manufacturer uses the 5x120 PCD, although 4x100 is very common with other makes and models.

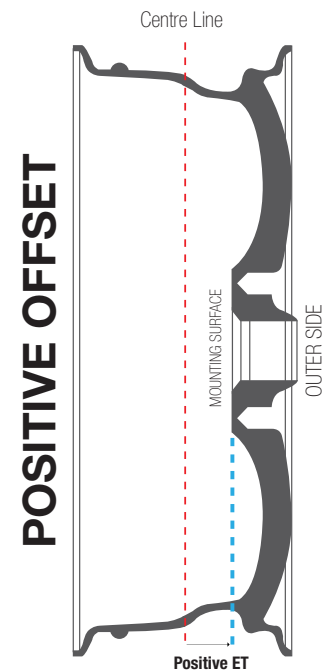
The PCD cannot usually be altered, although for certain wheels it is possible to have them re-drilled to another bolt pattern by a specialist, but it's rare. Instead, an easier way to fit different PCD wheels is using a bolt-on adapter. However, it's not ideal and the thickness of the adapter added between the wheel and hub affects where the wheel sits within the arch, and that brings us nicely on to offsets.



NEGATIVE OFFSET



ZERO OFFSET



POSITIVE OFFSET

## Offset

This is perhaps the most crucial consideration to take into account when it comes to wheels and yet it's often misunderstood, not taken seriously or simply ignored. The offset is the measurement from the wheel's true centre to the mounting flange where it bolts to the car's hub. It's a precise measurement that is gauged in millimeters and it ranges between car, model and sometimes year.

Offset is key because it's all to do with clearance. Getting the offset wrong will stop the wheels from bolting up to the car's hub due to

fouling on the brakes or cause the tyres to rub on either the bodywork or suspension components, depending on how much it is wrong. Rubbing tyres is the last thing you want as not only is it illegal but it's dangerous, not to mention annoying.

Most wheels will clearly state the offset measurement with an ET (derived from a German term) prefix, such as ET35 for a 35mm offset. Spacers can help alter the offset by pushing the wheel away from the hub, which lowers the offset, but it's virtually impossible to increase an offset as

that would require taking metal away from the centre of the wheel or hub. It also gets complicated when fitting bigger or wider wheels, as the offset will vary depending on what clearance you have to work with on the inside and outside of the wheel, which means a wider wheel won't necessarily fit with the same offset of the original it replaces. It's not the kind of thing you can hope for the best with, so keep to tried and tested 'safe' offsets by researching what other owners have used.



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DB	JSS 962N	NSE 87V
1B	CTO 7885	QMG 7885

KGW 905A	NEE 42	PHA 998	ROF 33R	SPU
AFV 247A	NEI 38R	PHH 153P	R86 FRS	SPI

U M	TSS 439	X
5R	TUI 6	567 XJ
B	TUK 1L	YDA 999
	TJIN 358	

2 JRR	KAV 36N	KPW 333N	LFM 437N	MFF 9
S 90V	KAY 537V	KPW 489N	LFM 427N	MFO 2
A 238G	KAY 88V	KPW 239N	568 LHA	MGL 9
	KAY 32V	83 KRD	1 YMO	4521

NPA 910	4268 PF	LR0 81	STU
NPC 310	482 PPE	RUD 4L	STU
NRG 71	PPP 475	RUG 3R	STU
2222 NS	PRC 84W	RUC 62B	607

3V	VG 5830	227 YUS
3L	VIL 4	942 YUS
5V	V15 OME	643 YUS
11	V18520	VIML 214



## How can you find out a wheel's fitment?

Most wheels will have their measurements stamped into the metal, usually on the inside of the spokes. However, to make things awkward, not every wheel has this information present. If it doesn't then it's possible to measure each fitment. Finding out the PCD and centre is easy enough with a vernier gauge, while a tape measure will tell you the width and diameter. Although, remember, a wheel will always measure an inch larger than it really is if you measure the outside edges.

Working out the offset is a little trickier. First, you need to measure the wheel's overall width from edge to edge in millimeters, and then divide the number by two to work out the wheel's true centre point. Then lay the wheel face down on a flat surface, being careful not to damage it, and place a straight edge along the up-turned back lip of the wheel. Now measure the distance from the straight edge down to the wheel's hub flange. Simply subtract the first calculated measurement for the wheel's true centre point from the second measurement taken with the straight edge to work out the offset.

## How can you find out your car's fitment?

This won't usually be written anywhere in the handbook and although it's likely to be written somewhere on the wheels themselves, they may have been changed at some point. The easiest way to find out your car's exact fitment is usually by searching on the internet. Simply put your car's exact model and year into a search engine along with the words offset, or PCD, and search through a few of the results. Make sure you look at more than one site to ensure the results correspond and don't just find the nearest thing to your car either, find exactly the right model and year as fitments sometimes differ between either.



## Spigot rings

These simple rings can be considered locaters for wheels that feature a centre bore that is bigger than the car's centre hub. All the spigot ring does is taper the size down so it fits snugly and, as it doesn't take any pressure, most spigot rings are made from plastic. These are usually only required on a generic aftermarket wheel which features one centre bore and is drilled to suit several different PCD patterns.







## Centre bore

The centre bore measurement refers to the size of the single hole in the very centre of the wheel. It essentially locates the wheel true on the car's hub, so it's measured very precisely to within 0.1 of a millimeter, as it cannot have any excess play.

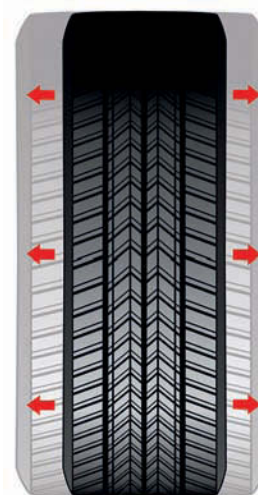
The centre bore measurement can catch

people out as some cars have the same PCD measurement but with different centre bores, which means although the bolt holes line up the centre bore hole won't allow the wheel to sit flush on the hub. Or, if the wheel's centre bore is too big for the car and there is play, it will cause bad vibrations when

driving. If that's the case, then spigot rings are your answer. The E39 5 Series is one to watch here, though, as it was the only BMW with a 5x120 PCD to use a different centre bore to every other model, which means some wheels cannot be swapped between models.



Increase Diameter



Increase Width

## Increasing widths and diameters

For just about every BMW, fitting a bigger wheel and tyre is not an issue, which is why most models came with different size options when new. But the most important thing to bear in mind here is rolling radius. It's crucial that the overall diameter of the tyre and wheel remains the same, or very similar, as altering it will affect the gearing and the accuracy of the speedo. This is why it's important to decrease the profile of

the tyre if the diameter of the wheel increases, therefore countering the larger wheel and keeping the rolling radius the same. It's also worth considering that the width of a tyre will alter its overall diameter, due to the aspect ratio. The easiest way to ensure you are keeping within limits is by using one of the many, handy on-line tyre size calculators that work out the difference in size between tyres for you ●



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# Tech Focus: BMW V-Formation Petrol Engines

We've covered the four- and six-cylinder petrol engines, so now it's time to take a look at the various V8, V10 and V12 engines that BMW has built...

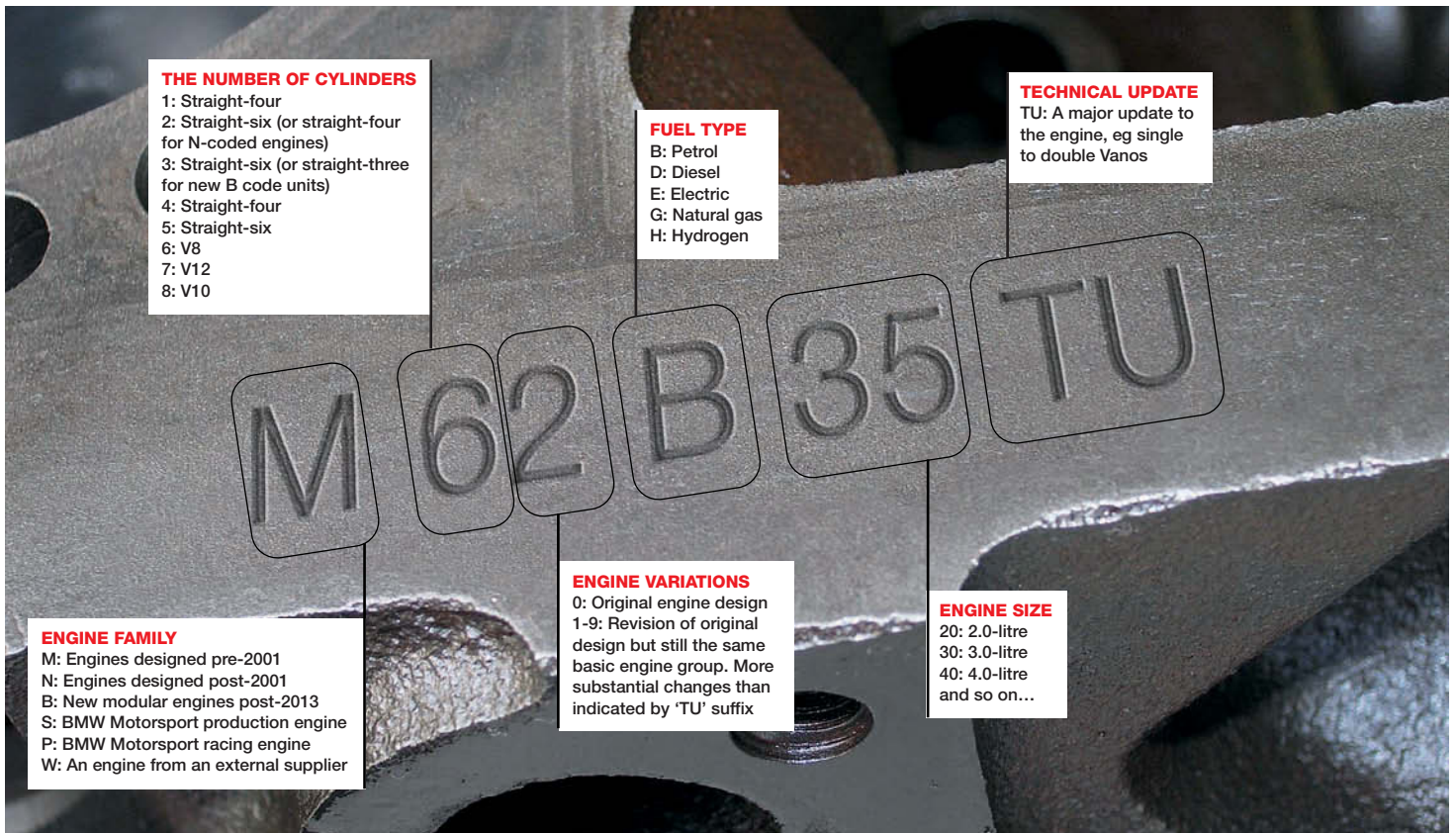
Words: Simon Holmes Photography: BMW

Whilst the iconic straight-six and in-line four-cylinder platforms have long made up the staple diet of BMW powerplants, we've been lucky that recently the company has been exploring other platforms. Although this is not anything new – BMW's first road going V engine was an eight-cylinder unit built in 1951 – after that it seemed to

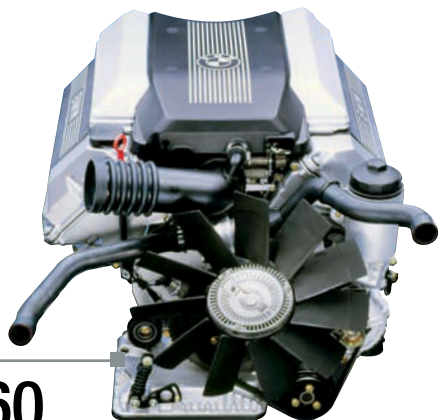
concentrate solely on developing the six-pot fleet.

That was until the late 1980s, when all of a sudden it launched a V12 and, a few years later, a V8 followed. Destined for the larger and more executive cars that demanded smooth but powerful engines, BMW has since developed both V8 and V12 platforms. It even tried a V10 at one point, proving it was not afraid to try something new when the occasion called for it.

Over the years, there have since been plenty of evolutions incorporating several new innovative design and technical features, some of which follow convention whilst others are borrowed from BMW's well-developed six-cylinder engines. Just as it has in other engine ranges, forced induction has also spread into the V-engines and they still remain in popular use with current models. Here's a look at the history since the 1980s...





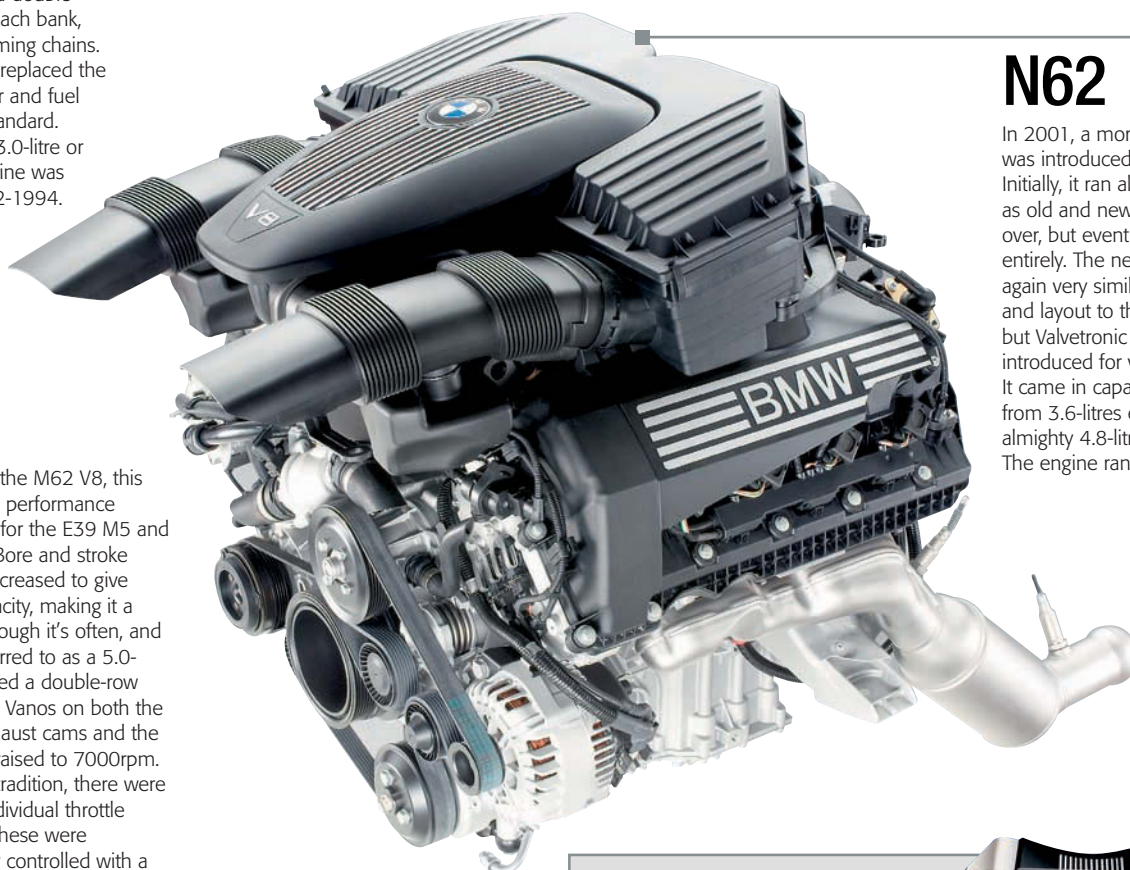


## M60

The first V8 engine to emerge from BMW in 40 years may have featured a classic 90-degree V design, but it was very modern, from the lightweight aluminium block and heads to the forged crankshaft and sintered con rods. It was also very advanced, featuring four-valves per cylinder, hydraulic lifters and a double-overhead cams on each bank, running from twin-timing chains. Individual coil packs replaced the need for a distributor and fuel injection was also standard. Capacity was either 3.0-litre or 4.0-litre and the engine was produced from 1992-1994.

## S85

BMW's first and only V10 was built solely for the E6x M5 and M6. It was said to have been inspired by BMW's previous Formula One experience and it was a true pedigree engine. It featured a 90-degree V formation with an aluminium block, heads and pistons. The crank was forged steel and capacity was 5.0-litres, with an output exceeding 100hp per litre. There was also a dry sump system, double Vanos and ten individual throttle bodies together with 8250rpm redline.



## S62

Based upon the M62 V8, this was the high performance version built for the E39 M5 and Z8 models. Bore and stroke were both increased to give 4931cc capacity, making it a 4.9-litre, although it's often, and wrongly, referred to as a 5.0-litre. It featured a double-row timing chain, Vanos on both the inlet and exhaust cams and the redline was raised to 7000rpm. In typical M tradition, there were also eight individual throttle bodies and these were electronically controlled with a fly-by-wire system.

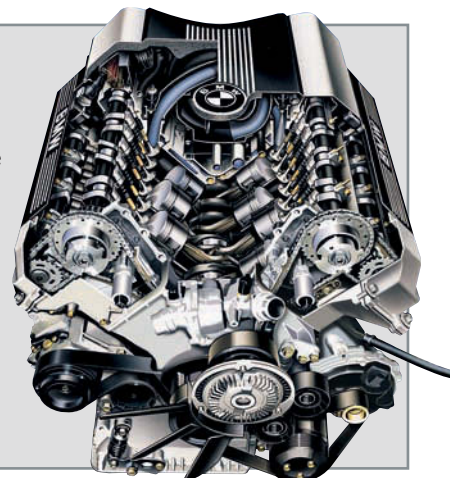


## N62

In 2001, a more advanced V8 was introduced in the N62. Initially, it ran alongside the M62 as old and new models crossed over, but eventually replaced it entirely. The new engine was again very similar in design and layout to the previous V8s, but Valvetronic was now introduced for variable valve lift. It came in capacities ranging from 3.6-litres early on to an almighty 4.8-litres in later life. The engine ran until 2010.

## M62

Although the M60 didn't enjoy a long life, it was replaced with the M62 V8 in 1994 which ran until 2005. Its design was similar to its predecessor, although this one had a single timing chain. In 1998, a TU (Technical Update) introduced variable valve timing in the form of BMW's Vanos system. Capacity also increased – the smallest was 3.5-litre, with 4.4- and 4.6-litre variants also available.





## S65

The S85's little brother was a V8 designed for the E9x M3. It shared the same bore and stroke of the V10 but with two cylinders missing, capacity was down to 3999cc. There was the same double-Vanos setup with individual throttle bodies (eight this time), but the dry sump was replaced with a regular wet sump. It also revved a little higher, with the redline now set at 8400rpm. There was also a 4.4-litre version developed by BMW for the E92 M3 GTS.



## N63

Things started getting more serious for the V8 in 2008 when the N63 arrived, as it was now fitted with twin-turbochargers. Although it was fundamentally a typical BMW V8 design, the big change was the reversal of the intake and exhaust locations. Air now entered the engine from the outside edge of the V and the turbos sat between the heads inside the V's centre groove. This created a more compact and efficient package. Capacity was 4.4-litres and Valvetronic only came with a later TU.



## M70

BMW's first ever V12 was an interesting one as the bore and stroke suggest it essentially joined two M20 straight-six engines together in a 60-degree V formation. That meant it wasn't as advanced as the V8 engines of the time, so there were only two-valves per cylinder and a single overhead cam on each bank. The 5.0-litre unit did feature modern additions such as hydraulic tappets, electronic throttle control with two separate ECUs controlling each bank though. The V12 came fitted in the 7 and 8 Series models from 1988 to 1996.

## S63

This performance version of the N63 V8 was originally destined for the X5 and X6M models, but in 2011, the F1x M5 and M6 received the S63 engine with a crucial Technical Upgrade overhaul. Capacity remained at 4.4-litres but Valvetronic was added and the rev limit rose to 7200rpm. The compression ratio also increased and more boost was summoned from the twin-scroll turbochargers. A second Technical Upgrade saw the engine put to use in the current X5 and X6M models once again.

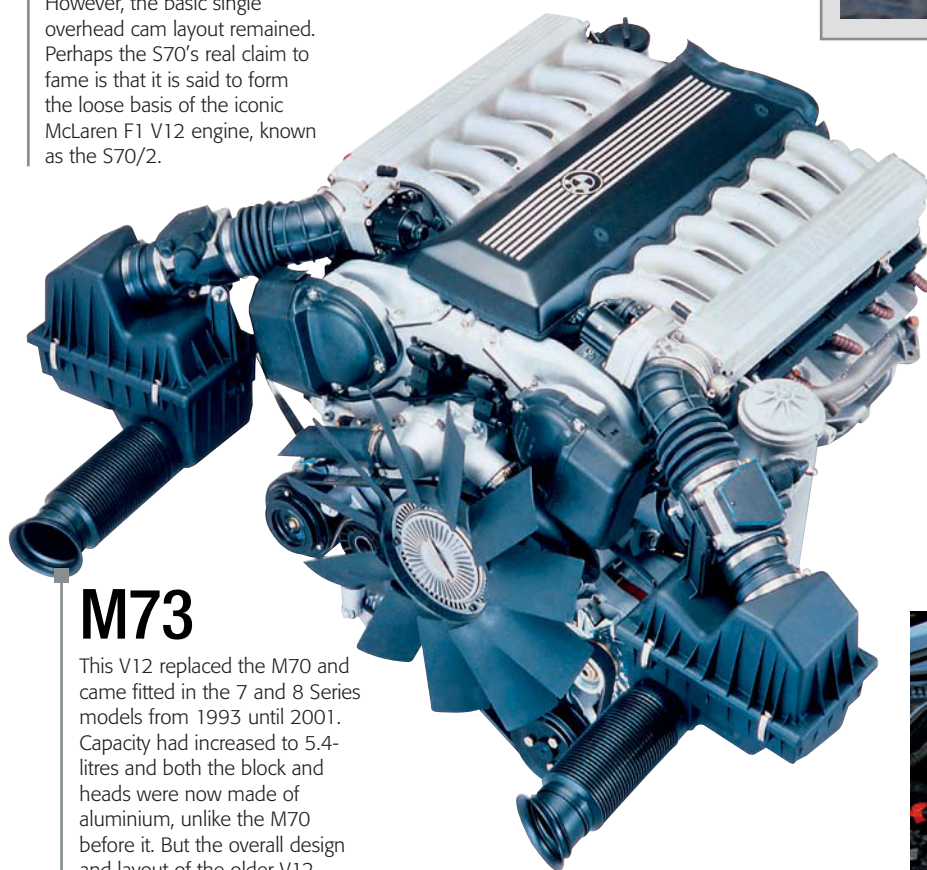






## S70

This was the high performance version of the M70 V12 that was fitted solely to the 850CSi. An increased bore and stroke saw capacity expand to 5.6-litres and the compression ratio and rev limiter were both raised for more usable power. However, the basic single overhead cam layout remained. Perhaps the S70's real claim to fame is that it is said to form the loose basis of the iconic McLaren F1 V12 engine, known as the S70/2.



## M73

This V12 replaced the M70 and came fitted in the 7 and 8 Series models from 1993 until 2001. Capacity had increased to 5.4-litres and both the block and heads were now made of aluminium, unlike the M70 before it. But the overall design and layout of the older V12 remained, which meant a single overhead cam on each bank and two-valves per cylinder still. There was a TU in 1998, but it wasn't mechanical. Instead, changes were to other components such as the ECU and cats to improve emissions.

## N73

Things took a massive leap forward for the V12 in 2003 when BMW replaced the M73 with this. The new 6.0-litre engine featured the same 60-degree V formation of previous V12 engines, but it was now fitted with double overhead cams on each bank,

four-valves per cylinder, Valvetronic and direct injection, so the injectors fired fuel directly into the cylinders. Production ended in 2008 and the engine only appeared in the E6x 7 Series, although Rolls Royce also used the N73 in their Phantom model.



## N74

This 6.0-litre V12 replaced the N73 in 2009 and features the same Valvetronic, direct injection and double Vanos systems, but with a pair of twin-scroll turbochargers attached too. The engine comes fitted only to the current F0x 7 Series models, although Rolls Royce has its own 6.6-litre version of the N74 that it uses in its current range of cars.





# E28 520i, 525e, 525i and 528i

**The E28 is fast becoming an appreciating classic and if you want one to enjoy on a regular basis, it's the six-cylinder non-M versions you should be looking at...**

**Words: Simon Holmes Photography: Dave Smith**

It's hard to imagine that BMW started work on the second generation of 5 Series some six years before it was launched, but there was good reason for the pre-planning. The previous E12 had been hugely successful and BMW was keen to maintain the lead it had pulled on its rivals. However, when the E28 arrived in the UK in early 1982 it was immediately criticised for its conservative styling that didn't seem to look a whole lot different from the previous model launched some nine years before! But although the two models shared the same roof pressing, virtually every other panel, part and component was different and improved upon.

For a start, the E28 platform was lighter, lower and more aerodynamic. It featured a shorter wheelbase and the suspension incorporated a double-pivot design at the front, borrowed from the E23 7 Series. At the rear, there was an improved axle design to increase both stability and ride comfort.

Comfort was also a focus inside, as the seats were bigger and the rear cabin space increased for both headroom and legroom. The dashboard was also angled towards the driver and double door seals reduced road noise.

Electronics played a bigger part this time round, as an on-board computer and a new sophisticated Service Interval Indicator were introduced, along with other optional, modern day luxuries such as power steering, central locking, electric windows and ABS.

Power-wise, the E28 was launched with a number of engines ranging in size, all of which were carried over from the E12, but modern upgrades such as fuel injection ensured they were up to scratch. The straight-six range started with the 520i, powered by a fuel injected 1990cc 'small-block' M20 engine, producing 125hp and 122lb ft of torque. This equated to a 0-62mph time of 11.8 seconds and a top speed of 115mph when connected to the standard manual gearbox. Next in the six-pot family came the 525i, which was fitted with the larger 'big-block' M30 engine. Capacity was up to 2494cc and power output increased to 150hp and 159lb ft of torque, which produced a 0-62mph time of 9.8 seconds with a top speed of 125mph, again with the manual transmission option. Last up, fitting in before

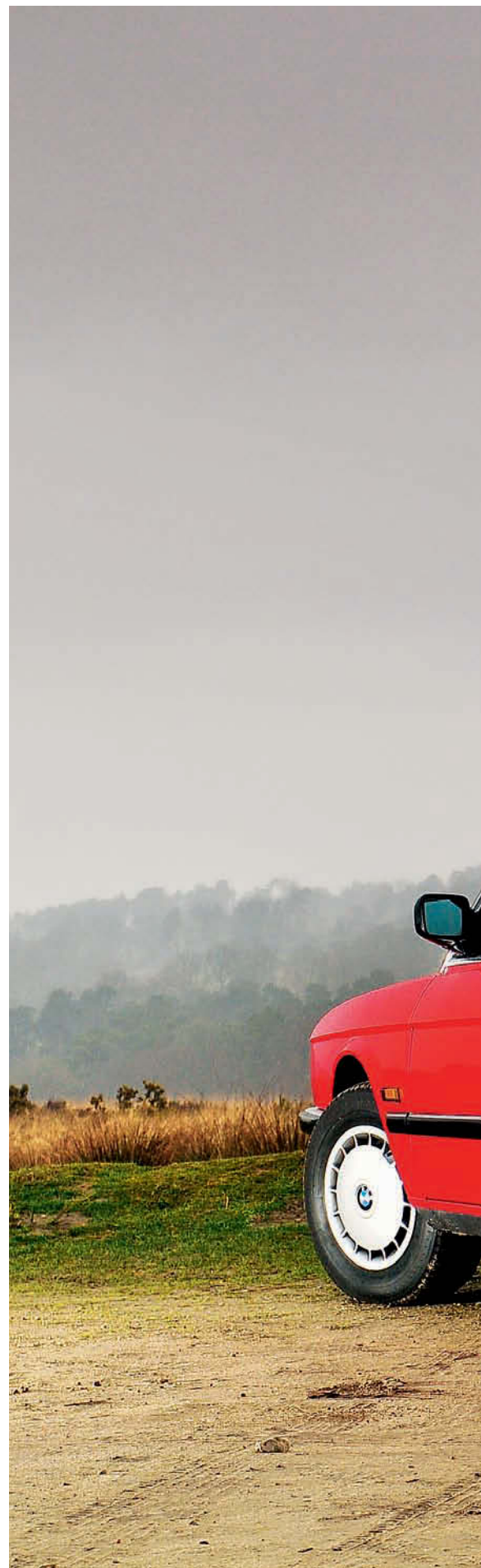
the more sporting M535i model was the 528i, which again used the larger M30 engine. In the 528i, the 2788cc unit produced a gusty 184hp and 177lb ft of torque, which offered impressive performance thanks to a 0-62mph time of 8.4 seconds and a top speed of 134mph. A five-speed manual gearbox was standard but on all six-cylinder cars there was also an automatic option. At first, this was a three-speed transmission but that was soon replaced with an updated four-speed in 1983.

By 1984, BMW was forced to address a demand by the public for more fuel-efficient models. This is where the 525e entered the picture. The 'e' designation stood for 'eta' and the model was based upon the American-spec 528e that had been introduced a year-and-a-half earlier. The 525e featured a unique 2.7-litre version of the 'small-block' M20 engine, fitted with a new Bosch fuel injection system for more accurate control of the engine, which improved performance and emissions. Power was down to 125hp but with 177lb ft of torque to match and in the UK it was only available with the four-speed automatic. This affected performance, which was listed as 0-62mph in 12.2 seconds with a top speed of 118mph.

Other enhancement updates followed in the final years of the E28, and in 1985 the 520i received a mild revamp that saw an improved fuel injection system increase engine output to 129hp and 128lb ft of torque. To accompany the changes, the axle ratio was also lowered for manual transmission cars and low profile tyres were added for the first time.

In 1986, the 520i was upgraded to discs at the rear, bringing it in line with the rest of the six-cylinder cars that already had them as standard and the interior received some minor changes across the range. A majority of cars from this time until the E28's end were equipped with the 'Lux' specification pack, which included alloy wheels, electric windows and mirrors, central locking and a sunroof.

The E28 outsold the previous E12 but the styling quickly aged the car, which meant its lifespan wasn't as long as its predecessor. Production ended in 1987 after a six-year worldwide run to make way for the replacement E34 model.









## Buying one

As a classic car to live with and enjoy on weekends, the E28 is ideal. It's modern and practical enough to actually use whilst still feeling decidedly retro. And if you plan on using it regularly, then the six-pot cars make more sense than the less torquey four-pot, as the silky smooth engines suit their character. Plus they are usually better spec'd.

If you do want one, be aware there aren't many to choose from, so be prepared to make compromises rather than deciding on a particular model, in a

certain colour. Also consider that there's not a whole lot of difference between the 520i and 525e in terms of performance, it's only the 525i manual and 528i that feel notably faster than the other models.

You should be buy based on the condition over anything else. There is plenty to check so make sure you're up to scratch and always take the car on a test-drive. An E28 that feels unresponsive and tired, both in terms of engine power and general handling, will indicate how well it's been looked after and loved.

Look for proof of that, too. A car that's 30 years old should have a good amount of history to show it's been treated well.

Price-wise, it's hard to find a working six-pot E28 below £1500 now. Decent cars that are in good shape will easily cost double that, so budget as much as you can or if you're limited, at least be prepared to take on a car in need of work. At the top end of the scale, we found a mint looking 528i with 51,000 miles for a shade under £9000.





## Interior

The E28 wears its miles well, although the driver's seat bolster tends to wear at high miles. A specialist trimmer can repair them but it's not cheap. The other option is to find a good replacement, which is hard to do, although it helps that E30 3 Series seats bolt straight up to the E28 runners. With some modification the later E34 5 Series seats can also fit. Over the years, the sun can fade the parcel shelf colouring and crack the top of the dashboard. Both can be either repaired or replaced.

Electrics are your next problem, so find out if everything works as it should. Slow or seized electric windows or mirrors will be down to either the motors or switches and these can both be cleaned and lubricated, which usually brings them back to life. Sunroofs can seize through lack of use, while a broken heater is more likely to be a faulty matrix or valve. If the central locking is showing signs of dying then check and replace its control module that is fitted in the driver's side A-pillar.

More serious issues can occur with the instrument

clusters. If the service indicator is dead then there's a good sign that other gauges will soon follow if they haven't already stopped working, as the cluster incorporates a battery that corrodes and damages the circuit board its mounted to. The earlier, pre-1986 cluster boards cannot be repaired, so a good secondhand one has to be sourced, but supply is drying up. Later, face-lifted clusters can be repaired. The faulty cluster will also tend to knock out the OBC and, eventually, every other gauge.



## Steering and suspension

There are plenty of reasons why an E28 might feel a bit vague, lifeless and tired when it comes to the handling and steering side of things. This tends to ruin the feel of the car but it can usually be cured relatively simply and cheaply.

Starting with the rear, if there's a light knocking noise when pulling away or if the car has fishtailing tendencies at speed, then the axle beam bushes are most likely worn and it will slowly get worse. However, it's quite a tricky job to replace them unless you have the correct tools and it's always worth fitting high quality replacements that will

last. If the car experiences wheel hop or a harsh vibration when pulling away quickly, then the trailing arm bushes will need replacing.

At the front end, TCAs wear out, as do the bushes fitted to them and a shudder when braking is a sign they are on the way out. A knocking noise when moving the steering wheel at stationary indicates the Pitman arm bushes or tie rods are worn. A light rattle when driving is more likely to be worn anti-roll bar bushes. Worn ball joints are a little more serious as, left to get worse, they can cause further damage to other components, so any strange handling

tendencies should be investigated immediately. Another common fault that makes the car drive badly is the steering box mount failing, which causes a terrible wayward feeling from the front end. Although the mount can be welded back in place, it can break again, so it's advisable to add a reinforcing locating dowel at the same time.

Last of all, dampers often get tired and corrode if they haven't been replaced in a while. Even if they aren't leaking fluid it's worth replacing them if they look a bit dilapidated, as the spring cups have been known to rot and fail, which is dangerous.



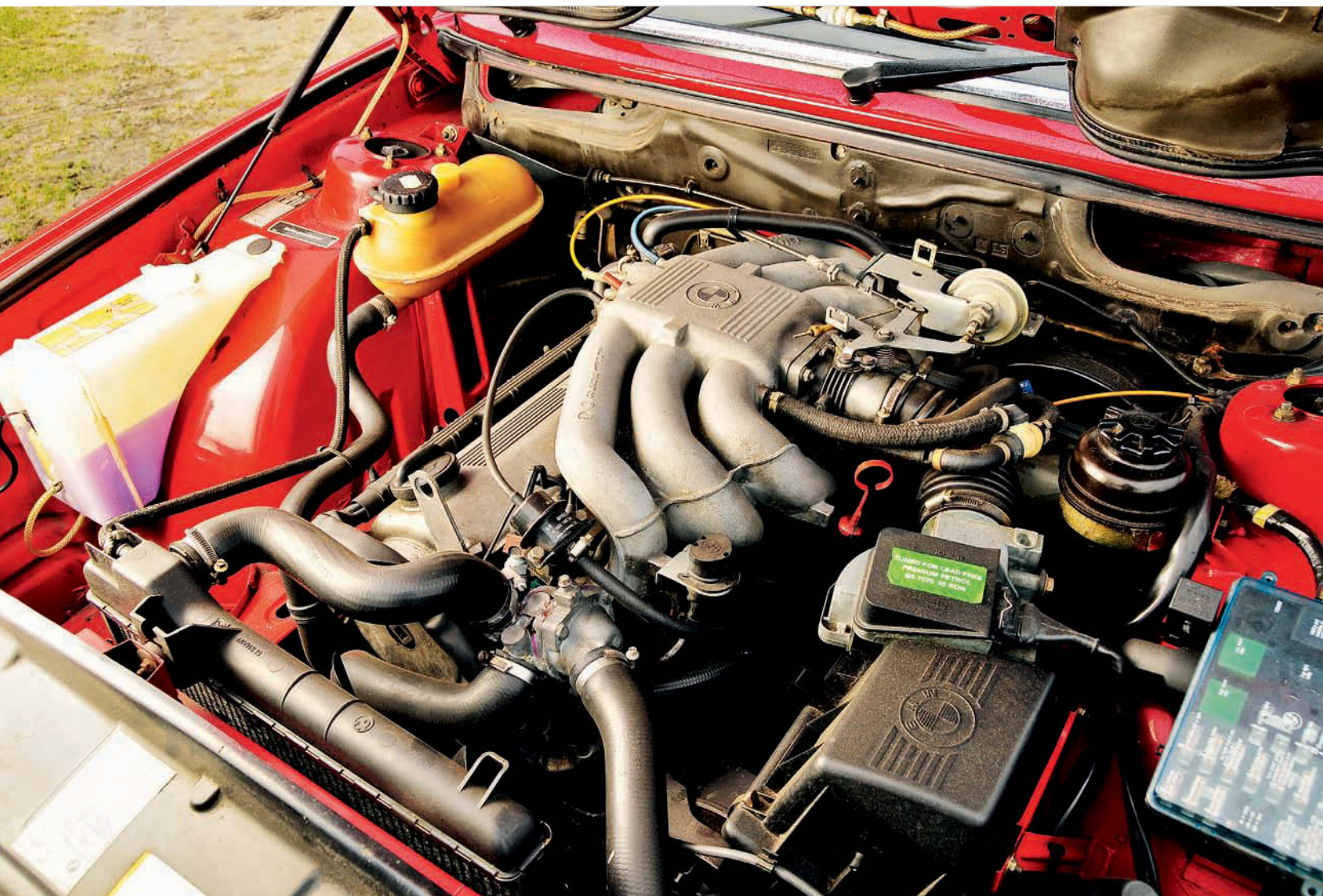
## Transmission and drivetrain

The manual 'boxes are near unbreakable, even after huge miles, but they can begin to feel a little loose and tired after time. This is due to worn linkages, selector shafts and bushes. Replacing these will make the 'box feel tight again. Often just replacing the gear stick bush alone will cure most of the slack feeling, but it can be tricky.

The auto 'boxes are generally pretty reliable units but they require regular fluid changes to remain in tip-top state so look for evidence of this in the service history. Otherwise, high mileage begins to kill them and the torque converters can also fail. Both the manual and automatics are prone to leaking a little oil, which is usually caused by faulty selector shaft

and/or output shaft seals.

Elsewhere, the transmission, diff mounts, propshaft centre bearings and couplings all tend to perish over time, creating 'donk' noises and vibrations at low speeds. Also make sure that the clutch master cylinder mounting bracket is in one piece as they are known to break.



## Engine

Both the M20 and M30 engines are very strong but they do require regular maintenance, especially as they get older. Oil changes are recommended every 6000 miles and coolant should also be changed regularly. The M20 engine in the 520i and 525e uses a timing belt and this should be changed every 50,000 miles or so, though as these cars get older it seems popular to change them even more regularly than that. It's always worth doing the water pump at the same time as it's far more accessible with the belt off.

The M30 engine in the 525i and 528i uses a

timing chain instead of a belt, and it shouldn't need replacing unless, for example, the engine has done 300,000 miles and it sounds rattly. The plastic chain guides are worth replacing if the engine is apart, though.

If either engine has a hesitant idle then check for corroded vacuum lines first, before moving on to air-flow meter and the cold start valve. If there's a smell of fuel either in the cabin or under the bonnet then it's likely the fuel tank is leaking where it meets the filler neck, or the fuel lines are beginning to corrode, which doesn't cost much to replace but take time.

Other than that, it's the cooling system on any E28 that needs close inspection. On the test-drive make sure the temperature gauge doesn't read erratically. It should go up to and remain around the halfway point, even in traffic. If it does show strange signs then the viscous fan is the first place to look; make sure it is engaging and disengaging as it should. Then it's time to check the radiator as these tend to corrode and then leak from the end caps. Also check that the hoses and expansion tank haven't perished and are leaking coolant as, although it's fairly rare, this could kill a headgasket.



## Wheels, tyres and brakes

Secondhand E28s tend to wear either their original wheels, alloys borrowed from another model, or aftermarket replacements. As long as they fit properly and are in keeping with the car then it doesn't make much of a difference. Be aware, though, that any wheel wobble at speed could be linked to the wheels and tyres, no matter how good they look.

While you're inspecting the wheels it's always worth checking the tyres closely, both front and rear, as odd wear patterns are a certain indication that something is wrong suspension-, chassis- or steering-wise.

When it comes to brakes, there are a few common faults. The calipers tend to seize over time, dragging on the disc. If this happens it will require a refurb to make them new again. A faulty master cylinder can also cause dragging brakes, and is likely to be the main culprit for a poor pedal-feel, too. Brake lines are known to corrode and replacing them front to back is a tricky job but should improve a lifeless brake pedal, as will lubricating the linkage to the master cylinder. If the 'brake' icon ever

illuminates on the dashboard whilst braking then it's most likely that the brake booster or power regulator, known as a 'bomb', is at fault. Warped discs will cause a brake judder, which will start at high speed but can get worse.

Finally, there's the ABS system, if it has one fitted. The easiest way to check if it does is by looking for the 'anti lock' or ABS light on the dashboard, or the ABS pump under the bonnet, although the washer fluid bottle hides it quite well. When you start engine the anti lock/ABS light should come on and then go off again quickly. If it stays on, or if goes out and then comes back on when you're driving, it means there is a problem. It's most likely to be the trigger rings, located in each of the hubs. These often rust up and so simply cleaning them with a wire brush can cure the issue. Otherwise, it could be down to a faulty sensor, pump, or control unit (which is located above the glovebox).

If the anti lock/ABS icon is on the dashboard but the light doesn't come on at all then the bulb has been taken out or the entire ABS system has been removed. The latter is fine to pass an MoT still, the former is not, so physically check for the pump, control unit and sensors.

### E28 520i

**ENGINE:** Straight-six, SOHC  
**CAPACITY:** 1990cc  
**MAX POWER:** 125hp  
**MAX TORQUE:** 122lb ft  
**0-62MPH:** 11.8 seconds (14.4)  
**TOP SPEED:** 115mph (111)

### E28 520i post-1985

**ENGINE:** Straight-six, SOHC  
**CAPACITY:** 1990cc  
**MAX POWER:** 129hp  
**MAX TORQUE:** 128lb ft  
**0-62MPH:** 11.4 seconds (13.3)  
**TOP SPEED:** 118mph (114)

### E28 525i

**ENGINE:** Straight-six, SOHC  
**CAPACITY:** 2494cc  
**MAX POWER:** 150hp  
**MAX TORQUE:** 159lb ft  
**0-62MPH:** 9.8 seconds (11.9)  
**TOP SPEED:** 125mph (121)

### E28 525e

**ENGINE:** Straight-six, SOHC  
**CAPACITY:** 2693cc  
**MAX POWER:** 125hp  
**MAX TORQUE:** 177lb ft  
**0-62MPH:** 12.2 seconds  
**TOP SPEED:** 118mph

### E28 528i

**ENGINE:** Straight-six, SOHC  
**CAPACITY:** 2788cc  
**MAX POWER:** 184hp  
**MAX TORQUE:** 177lb ft  
**0-62MPH:** 8.4 seconds (10.8)  
**TOP SPEED:** 134mph (129)

*Figures in brackets for automatic*







## Bodywork

As you might expect with an '80s BMW, rust is a major problem so it's wise to inspect any E28 vigilantly. That's because most of the worst rot comes from the ground up, so get a good look underneath the car if you can. Look for crunchy-looking jacking points and sills. Then check the front floorpans where they meet the bulkhead and inner sills. Ideally, lift the carpets on the inside on both sides. If this is not feasible then just feel if it's damp. This will indicate if the drainage holes are blocked (and further possible rot) or possibly there's a broken heater matrix.

At the rear, the axle mounts are prone to corrosion, which is costly to repair. Also check the rear panel around the numberplate lights, lock mechanism and below the tail-light area for bubbling paint, as this means rot is coming through. Then open the boot and

look for signs of moisture. Both the bootlid and tail-light seals are known to fail, leaking water into the boot area which will damage the carpet, trim and electrics. Inspect the boot floor and then take a look inside the spare wheel well for signs of corrosion.

Working forwards, the doors can rot at the hinges and from the bottom up, as can the front wings – and this can continue along the lip of the arch. Up top, the sunroof panel can rot and any corrosion around the A-pillars and scuttle panel is particularly bad news as repairs here are complex and costly. Under the bonnet, rot can begin in between the inner wings and strut tops, again often due to blocked drainage holes. Finally, the plastics and any chrome work as these bits are hard to find and expensive to replace, if missing or damaged.

## Verdict

The E28 is fast maturing into a BMW icon, and whilst the M5 models are already there, the more basic six-pot cars are becoming more sought after. Prices are on the up and the days of buying a tidy car for a few hundred pounds have long gone.

There are plenty of things to look out for when buying one, but mechanically, there's less to worry about as virtually everything is easy enough to sort. But getting into a full restoration of the bodywork quickly becomes time-consuming and wallet deflating so buy the most rot-free one you can find. That's no reason to avoid an E28, just source a car wisely and enjoy it as a practical and well-priced modern classic whilst you still can ●



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# LONGTERMERS



The M6 heads off for a jaunt to the Nürburgring, there's more fettling for the 135i and the E36 318iS makes further progress to being a full-on track weapon

## E24 M635CSi

I think I left things last month with the E24 safely tucked-up at BM Sport awaiting a new heater blower motor that was allegedly coming from Europe with an arrival date of mid-May. Well, here we are getting on for a month further down the line and the arrival of the motor is no closer... in fact it's actually further away as I've now been informed by Schmiedmann's very helpful customer service chaps that it has just been informed by its supplier that the estimated arrival of the part is now expected to be sometime in August. Irritating. Despite this I'm still refusing to pay BMW £300 for a new motor as a point of principle – it's just a rip-off and by hook or by crook I'm going to find a replacement for less than this. If the worst comes I'll just have to wait for later in the year as I can probably

live without the fan motor until then.

The news that the Six wasn't going to have a functioning fan anytime soon prompted me to get BM Sport to put it back together so I could actually use the car and, in hindsight, it would have been a better idea not to have booked it in for the new motor until I actually had one in my hand. The upshot of all this was that I could use the M6 for my Nürburgring 24 Hours trip and despite some incredulous looks from folk in the office who obviously though I was mad to contemplate the trip in a 27-year-old car I was really looking forward to it. The race had been won outright 30 years ago by a 635CSi driven by Axel Felder, Jürgen Hammelmann and Robert Walterscheid-Müller so it seemed like a good idea to take the E24 to the race.

The less good news was that the race was due to start on my wife's birthday so after some hard negotiations we settled on me being around for the Friday night celebrations in London and that I would head off for the 'Ring early the following morning. Despite the early alarm clock on the Saturday morning I felt pretty chipper heading out of London on deserted roads and I managed to arrive at Eurotunnel check in bang-on the allotted time. I whizzed through check-in, customs and passport control and joined the queue for my train but after sitting stationary for a while it was obvious that not all was well with the Eurotunnel and eventually my 7.20am train morphed into the 8.45am train... which meant I wouldn't hit the road in France until around 10.30am. With an average run

to the 'Ring taking about five hours and the race starting at 4pm and my need to visit the accreditation centre to pick up my media pass before gaining access to the circuit, things were looking rather tight.

While I don't advocate speeding I did need to 'press on' somewhat and in France and Belgium these days there's a very fine line between an on-the-spot fixed penalty and a massive mortgage payment-equivalent fine and an immediate driving ban, so I attempted to cruise at around 90mph in the hope that this would buy me a little time but not be so fast as to attract unwanted attention on the lightly-trafficked roads. The Six took it all in its stride loping along serenely with just a bit of wind noise to remind me that I wasn't in the all-singing, all-dancing latest generation of machine.





There are some stunning roads around the 'Ring and even though 250,000 people were leaving the circuit you can still find plenty of deserted sections



The ride's surprisingly good and the benefit of not having too much rubber on the road is that even on the concrete paved sections of Belgian motorway there wasn't too much tyre roar. Flooring the throttle does elicit slightly more in the way of exhaust noise than I'd ideally like when in cruise mode – thanks to that non-standard exhaust.

My favoured route to the 'Ring takes in France, heading past Lille before pushing on through Belgium before turning right just after Liege to drop down towards Germany. Google maps would have you believe that heading for Brussels is the better option but as I have *never* driven round the Brussels ring road without encountering some sort of snarl up I avoid it like the plague. The added bonus of approaching the circuit from







my chosen route is that it seems like the least popular way to get there so is lightly trafficked and you get to enjoy some German back roads, too.

A quick stop for a tank of Super and some Scooby snacks saw an average economy figure on the motorway of just a smidgen over 25mpg, which doesn't seem too bad but this dropped once I turned off the motorway and started to enjoy myself on the smaller roads. I kept the speed down through the occasional town and village I encountered but on the sections in between there's so little traffic that I simply enjoyed myself. While the M88 straight-six is very tractable – it's happy to pull from as low as 1000rpm in fifth – driving in this way does make for some glacial acceleration by modern standards but drop down a couple of cogs and keep it singing above 4000rpm and it's still a very enthralling drive. The noisy exhaust was also quite entertaining on these roads, allowing plenty of the rich mechanical goodness to be shared with the occasional other road users I met. I soon got back into the swing of overtaking in a 'wrong-hand' drive car and for 15 or 20 miles I was the king of the road... until a well-driven local E90 330d appeared in my mirrors and resolutely stuck there like a tube of unwanted UHU.

As I pushed a little harder the car's soft suspension reared its ugly head and eventually the angles of lean I

was generating forced me to back off a little as the car just didn't feel within its comfort zone any longer. I made a mental note to look at suspension options and pricing when I returned to Blighty. Despite backing off somewhat, the 330d didn't pass me and as we traversed another village I ended up missing the diversion to the 'Ring sign and pretty soon my progress was halted by some road works straddling the road. 330d man pulled up beside me and made the universal sign for me to lower my passenger window before simply enquiring "Nürburgring?". I nodded and he said, "follow me!". He led me on a merry dance through some back roads and just as I thought he was going to stop me and steal the Six we're back out on the original route to the 'Ring. He stopped and I pulled up alongside to thank him. After a short conversation in his perfect English and my pidgin German it's obvious that he's a big fan of the E24 and he couldn't believe it when I told him it had done over 250,000km!

Eventually I hit the 'Ring Boulevard, picked up my accreditation and installed the M6 in the BMW M Festival underground parking area where the straight-six and the hot exhaust happily ticked away as they cooled down while I ran off to watch the start of the race from the top of the TÜV tower on the start/finish straight. I was hoping for a BMW win

on the Z4 GT3's last outing at the Nürburgring 24 Hours but sadly it was not to be and the following afternoon I prepared to head back to the UK.

I was slightly surprised to find four or five Germans ogling the M6 when I returned to retrieve it from the car park, especially as there was a swanky 911 parked next to it but they're full of praise for the old BMW, although one of them is obviously a fully paid up member of the E24 anorak society as he pointed out it has the wrong wheels and exhaust!

The return leg of the journey was more or less a reverse of the outward one but this time there was a traffic hold up around Spa, not at the Eurotunnel and despite only doing about three miles in an hour the Six's temperature gauge didn't budge from the vertical position, which only goes to show that the new radiator and viscous fan clutch were wise purchases a few months back. Prior to hitting the jam I did briefly extend the M6's legs on the short stretch of autobahn before hitting Belgium as I wanted to see if it would still do its original 158mph top speed. I got as far as an indicated 135mph before my sensible side asked whether I really wanted to end up stranded on the hard shoulder in the middle of nowhere on a Sunday night waiting for the German equivalent of the RAC to arrive? Safe to say it still seemed to be pulling pretty hard at 135mph!

Overall economy for the 800-mile round trip came out at just under 27mpg and while I didn't step out of the car feeling as fresh as a daisy I didn't feel like I just gone 12 rounds with Floyd Mayweather either.

To give the car a bit of a treat when I returned I did splash out on a Richbrook car cover for while it remains parked on the street over the summer months. I've managed to sort out a garage for the winter months but as it's ten minutes walk away from my house I thought I'd keep the car on the street until the weather turns as if it's tucked away I might end up not using it. Anyway the Richbrook cover seem to fit pretty well and looks like it's nicely made and comes in a handy carry bag for when it's not in use – pretty good value at £109 including delivery. Last item on the monthly list was the dreaded road tax – £230 for another year.

*Bob Harper*



## E24 M635CSi

**YEAR:** 1988

**MILEAGE THIS MONTH:** 798

**TOTAL MILEAGE:** 162,690

**MPG THIS MONTH:** 26.8

**TOTAL COST:** £339 (cover, VED)



## F10 M5

Just under 2000 miles covered this month, at an average of just over 22mpg. The M5 is going strong and is just short of 50,000 miles.

It's not been a cheap month, though, as the front brakes needed replacing. As with the rears, it was discs and pads that needed doing: an unpleasant £1511.69. I thought that this was going to be the case, as the wear had been flagged up on the last Vehicle Check.

The work was carried out by BMW Swindon, while the car was in for its regular Oil Service. I received a nice video of the Vehicle Check being conducted, which once again highlighted the brake wear. They did point out that the grooving and cracks were evidence of hard use. Oops, but I guess that's what an M5 is for, and 50,000 miles on a set of brakes isn't too bad. The Oil Service and Vehicle Check were carried out as part of the Service Inclusive pack. So that was at least a part of the pain covered.


Before the car had gone in for its service I had noticed a vibration when

braking which I had assumed was down to the worn brakes; however, now the car is back with new discs and pads, the problem is still evident. Further investigation is required.

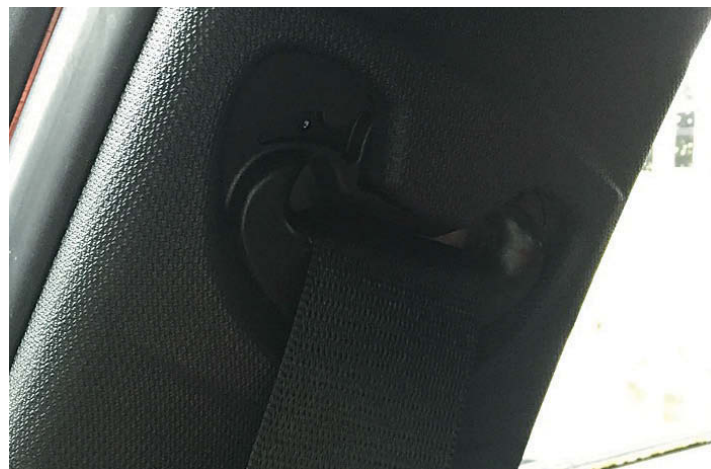
While the car was in, BMW also looked at the bonnet gap that had been bothering me. They made a few adjustments to the bonnet catches and the bumper but I'm not sure if I can see a difference.

Next month I will hopefully resolve the vibration in the brake system. I might also get around to deep cleaning the M5, too.

David Ingram-Hill



**F10 M5**  
**YEAR: 2012**  
**MILEAGE THIS MONTH: 1983**  
**TOTAL MILEAGE: 49,889**  
**MPG THIS MONTH: 22.3**  
**COST THIS MONTH: £1511.69**



## F20 118d Sport

Do you remember that old VW Golf advert with a Mk2 GTi featuring a man driving along with his wife sleeping in the passenger seat when suddenly something starts squeaking. He pulls into a garage and the old man running it discovers that it's the wife's earring doing the squeaking because, you know, it's a Golf. Well, when I discovered a squeaking sound in the 1 Series the other day I knew it wasn't my earrings, because I don't wear massive dangly cocktail evening earrings to the office, and also because the 1 Series is now becoming quite the noisy ride.

This new unwanted addition appears to be coming from the region of the seatbelt dispenser on the B-pillar and, obviously, it's the sort of noise that happens only when it wants to happen and not when you're tugging at it to see what's causing it. This new noise joins my mystery steering column/dashboard rattle and my armrest rattle – the one rattle that I have identified successfully (it was the lid not closing tightly against the cubby space and vibrating) but haven't got round to fixing!

In other news, I'm still on winters, which must make me seem incredibly lazy but then again summer doesn't seem to have quite materialised so

they're actually still feeling fine. I've also finally managed to book the 1 Series in for its (now overdue) Oil Service which is imminent. I also asked for an air-con service as it's starting to pong a little bit and then, just be even more demanding, I asked for a Fast Lane Service if possible. The lady booking me in said yes, though did say that I might have to wait a little longer than the 90 minutes they normally allocate, which is fine because at least they warned me up front. In the past I've only ever dropped my car off at the local dealership, which used to be 100 yards from the office but, now that it's been closed down, I haven't really got a choice. We'll see how this new-to-me dealership performs.

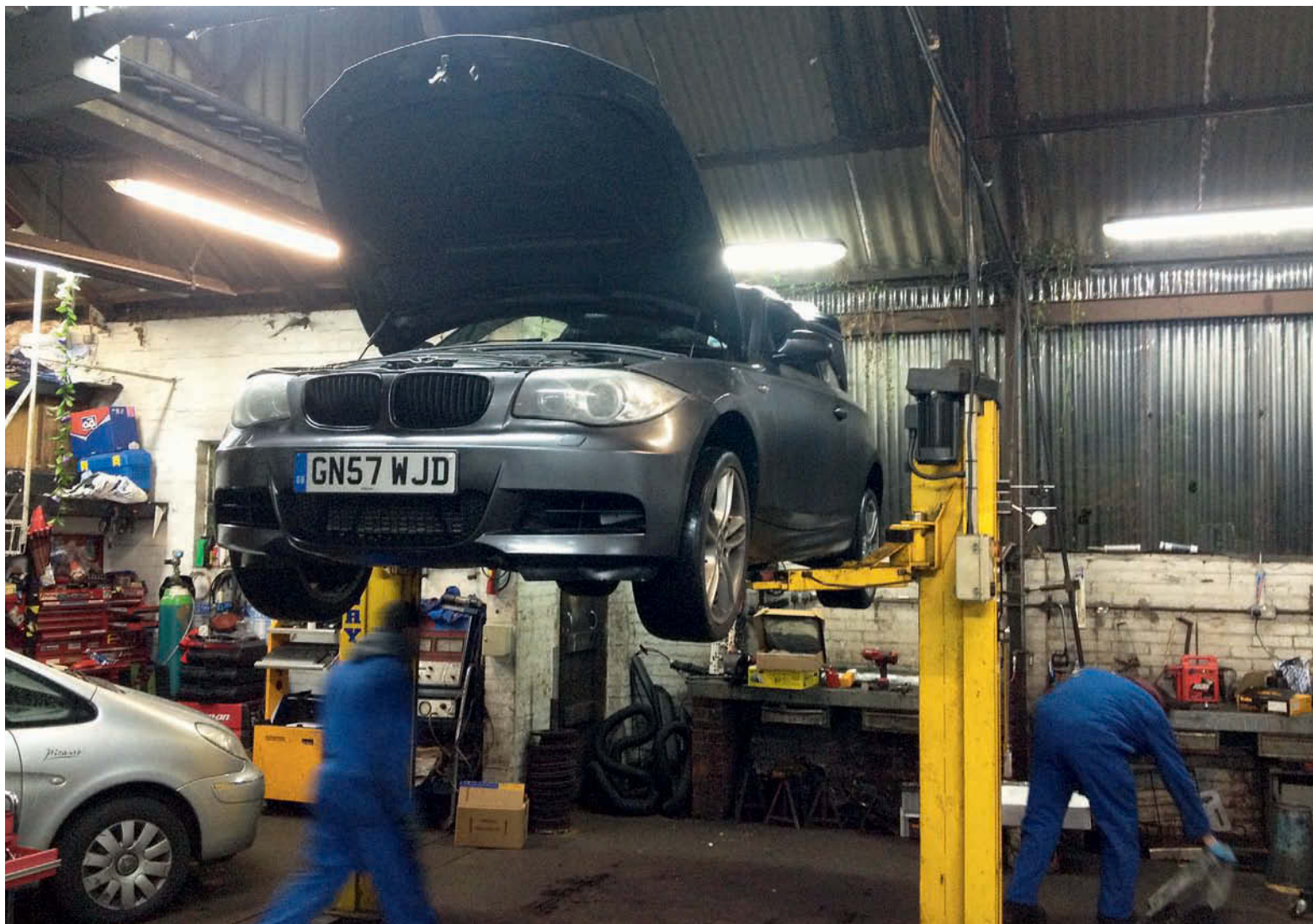
Elizabeth de Latour



**F20 118d Sport**  
**YEAR: 2013**  
**MILEAGE THIS MONTH: 453**  
**TOTAL MILEAGE: 15,782**  
**MPG THIS MONTH: 50.6**  
**COST THIS MONTH: Nil**







Removing the 'box' itself was easy enough; old clutch was knackered!



## E82 135i

At long last the time finally came. After several weeks of waiting, the boxes of parts that I've been amassing for the 135i have finally had the dust blown from them and been brought out of storage. Better still, the parts, namely the uprated clutch from Clutchmasters, a new replacement dual-mass flywheel and the uprated downpipes from VRSF, have been fitted to the car!

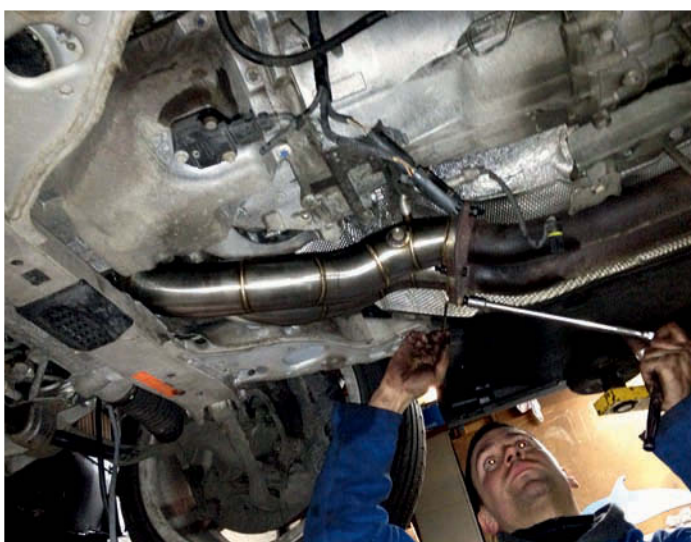
To recap, these parts had been collecting dust for some time now and were due for fitting a several weeks back but the car seemingly had other ideas when the water pump failed last month. Since then, the 135i has been put back to daily use to prove itself and ensure no other problems will be rearing their head anytime soon. A few weeks further down the line, all seemed to be fine, so I was back on track once again and booked the car in for a new parts fitting session at long last.

A local garage was entrusted to do

the work and after eyeing up the downpipes, the guys there decided they might as well go ahead and make things ever harder by opting to fit the clutch at the same time. For those that don't know, replacing the downpipes on these cars is regarded as being a little tricky or, more to the point, time-consuming due to the lack of space. The turbos each sit facing away from each along the left-hand side of the engine bay, just where the steering column passes by on right-hand drive cars. The downpipes themselves squeeze between the turbos and drop down to meet the existing exhaust system.

So, some five-hours after dropping the car off it was done! I'm sure the techs would agree it wasn't the easiest of jobs but thankfully, the parts themselves all fitted up perfectly without problem, which made life easier. The flywheel and clutch kit was a like-for-like changeover and after aligning it with the tool that came





Installing the clutch, flywheel and downpipes was pretty involved, taking around five hours to complete

**CONTACTS:**  
[www.clutchmasters.com](http://www.clutchmasters.com)  
[www.vr-speed.com](http://www.vr-speed.com)

supplied in the box, the gearbox slid straight back on easily enough. Likewise, the downpipes fitted in place easily enough, although the tricky part proved to be tightening the V-clamps that hold the pipes onto the backs of the turbos. Even with the steering rack unbolted for an extra few millimetres of clearance it was still incredibly tight for space. The exhaust was bolted up loosely in position to check the clearance and once everything was lined-up it was all tightened up and put back together with no issue.

Then, the moment I've been waiting for: it was time for a test-drive. The Clutchmasters kit I've fitted advises a bedding-in period of between 500 and 800 miles before really giving it some stick, but as I've been pottering around thanks to the standard clutch slipping already, this wasn't too much of a concern. In truth, I was more concerned about how the clutch would feel. Within a

few miles the height changed a little but, reassuringly, the pedal itself is virtually identical in both feel and pressure to the standard clutch, which is a huge relief. It is very slightly snatchier on the up-take, but I actually prefer that in some ways as it's tightened up the feel and response of the gear change. It certainly seems fine in traffic, which is exactly what I wanted; an uprated performance clutch that feels just like a standard one. I'm still running in those 800 or so miles before I put my foot down but I'm confident it won't slip which means I can now use the higher boost and power settings without worry at last.

However, where the clutch feels very similar to how it did before, the downpipes on the other hand have made a huge difference to the way the car feels and drives. And it's a very welcome change. The exhaust note is very mildly louder and that's how I want to keep it as I plan to

retain the standard exhaust system as it's plenty throaty enough for me. But what I really love is how much the downpipes have changed the throttle response, which has increased massively. It's completely transformed the car's willingness to rev, especially from low down, and I'd say it genuinely feels a good 50 per cent better. Response wasn't exactly what you would call sluggish before but it feels like night and day now. Initial response seems instant, it's easier to rev match on downchanges and the power also seems to be build faster. Also, on the plus side, there are no engine management lights or anything else strange going on. I've heard this can be expected as although all four lambda sensors are still present and plugged in, the car can still log a fault in the readings they take, but so far, so good.

So, what's next for the car? It all seems to be running in good health at the minute, so I'm going to

complete the running-in gently and then enjoy it for a bit. Although it does need a set of tyres soon, so I'll be looking to get those changed. And I still have an uprated alloy VRSF chargepipe and Forge uprated diverter valves to install to ensure reliability. More to come next month then...

*Simon Holmes*



## E82 135i

**YEAR:** 2007

**MILEAGE THIS MONTH:** 1117

**TOTAL MILEAGE:** 77,777

**MPG THIS MONTH:** 30.9

**COST THIS MONTH:** £250

(Clutch and downpipes fitting)





## F30 320d Sport

How long after you purchased your car were you still discovering new things about it? You'd have thought that after two years of ownership, KP12 would have given up all the little nuggets of discovery but no, this month I spotted another one. Although it does mark me out as perhaps not being quite as observant as I once was.

I've always admired the 19-inch alloys on my car and even though they don't do wonders for the ride they're a cracking piece of design, fill out the arches and arrest one's gaze very effectively. But their open design means they tend to show the dirt unless they're spotlessly clean, both on the outside of the spokes and inside the rim. So, whenever I clean the car myself I effectively clean the

entire wheel, or at least the portion that can be seen from the side, front or rear three-quarter angle. And in doing so this month I spotted a clear difference between the nearside and offside front wheels.

On the nearside front, the wheel has a lip around the inside circumference, whereas the wheel on the offside (and both rears, too) has an even surface across its radius with no 'lips' or 'steps' in evidence. And I have absolutely no idea why this is. I've just discovered it in the last day or so, and hence haven't yet enquired at North Oxford Garage as to why, but when I do I'll report back on the findings. A quick 'google' (small 'g' as alleged verbs are not to be capitalised, and yes I know I've whinged about this in the past)

doesn't show anything either, so I'm stumped at this point. And if you own an F30 with this style of alloy, please do now pop outside and check your own wheels and let us know what you find.

One assumes that perhaps the wheels fitted to the early batches of F30s were lipped in this way, and as the nearside front on my car is potentially newer than the others (bearing in mind the minor knock that corner took during the first year of the car's life) this is sufficient to create the anomaly. I'm not going to worry about it, though, it just seems a little odd.

We've been on another cruise this month, a five day splash and dash around the English Channel, with stops at Brugge via a coach trip, which wasn't nearly as hideous as I was

anticipating, and Guernsey via tender, as MV Ventura had to drop anchor away from the port. Brugge was lovely, the beer as good as it always was and The Grand Place as over-priced as usual. We lived in Brussels several years ago and would often pop up to 'The Venice of the North' to be fleeced by one of the restaurants in the centre, although to be fair if one ventures only a few steps around the corner the price tends to drop by 20 per cent. Guernsey was quaint and charming, even if our daughter nigh on ruined the experience through being a grumpy so-and-so. Late nights and five year-olds do not mix well.

I'm pleased to report that on this occasion, the customer service experience on-board was flawless, further helped yet again by the





## Alpina B9

As predicted in last month's report I returned from France to the sound of 'click, click, clack' whilst attempting to fire the car up for a drive. Thankfully my trusty jump leads were close at hand, at which point the car started at the first turn of the key. I have to say I got a little 'giddy' hearing the Big Six fire into life.

The venerable M30 engine is one of BMW's true greats with a lovely mixture of mechanical valvetrain noise and exhaust burble. It puts a smile on your face just hearing it idle away and gently warm through. Classic cars can just get you like that I suppose.

Unfortunately whilst the car started easily enough it would appear the battery isn't holding a strong enough charge, which meant I needed another jump to subsequently get home! I think I will have to treat the car to a new battery to avoid any potential reoccurrence.

I think it's fair to say the refurbishment of the Alpina is moving a little slower than I originally hoped but that's work schedules for you. I have been lucky enough to receive an invite to Alpina's forthcoming 50th anniversary birthday bash, at the factory in Buchloe. I can hardly wait as it has all the hallmarks of a truly superb event. I had hoped to drive

the B9 to the factory but given the refurbishment hasn't really progressed at enough of a pace I think the plane might just have to take the strain. Whilst that is naturally disappointing it does give me an excuse to take the car on a European road trip on another occasion.

Hopefully the sight of so many new and classic Alpinas at the event will spur me on at a pace to get stuck into HEX 199Y when I return home. I dearly want to see the process move on so I just need to pull my finger out and get on with it. Watch this space.

In the meantime, before I go, I need to charge my camera, clear out the memory card and start re-reading all my old Alpina magazine reviews. The phrase 'a kid in a sweet shop' springs to mind.

*Elliott Stiling*



### E28 Alpina B9

YEAR: 1983

MILEAGE THIS MONTH: 22

TOTAL MILEAGE: 137,235

MPG THIS MONTH: Not so much

COST THIS MONTH: Nil

presence of the various kiddies clubs, staffed by affable and bouncy types who happily take your little darlings into their care for the day, leaving the parents to roam the ship and basically, consume alcohol whilst simultaneously clearing out the shops of all manner of tat. It's a very effective business plan! Seriously, the value of these on-board kids clubs is fundamental to the experience; from our perspective, they sell the holiday. Quite why somebody would pay for this service on Royal Caribbean cruises (who charge for it, allegedly) is beyond me. An excellent service, and if you have children but are more used to the package holiday experience, I do urge you to try a cruise at least once. They're also reasonably priced when compared to

the ridiculous inflation of school holidays tariffs in evidence at places like Centre Parcs, who clearly seem to think that increasing prices by around 50 per cent around the holidays is an acceptable business practice. I guess people are just happy to pay it.

*Mark Williams*



### F30 320d Sport

YEAR: 2012

MILEAGE THIS MONTH: 1071

TOTAL MILEAGE: 42,389

MPG THIS MONTH: 47.1

COST THIS MONTH: Nil



## E36 318iS track car project

Last time, we left the E36 318iS Coupé running and driving with the brakes done, engine in and the suspension near enough sorted. This month I've fitted a proper set of pads.

These are the good old EBC Yellows, pads I've used for years on track cars. I say 'old' because they've been around for ten years or more and, in my opinion, nobody has yet made a better all-round brake pad for this kind of work. In fact, I rate them highly for road use as well. Not only do they have impressive bite from stone cold but they singularly refuse to fade. If you fade a 'yellow', you're trying too hard or you have a seriously fast car and need the next pad up, such as the EBC Red. Like all good brake pads they deposit a bit of brake dust but it's easily washed off and is hardly a concern for a track car like this. As for fitting them, they are a straight swap but EBC recommend that you fit yellows front and rear – a good idea to keep brake balance in order, and the rears are hardly expensive. EBC also supply adhesive anti-squeal backing stickers. I've never had brake squeal issues with Yellows but they're free with the pads, so why not? With these fitted, the brakes are now done and ready for some abuse.

To complete the suspension, I dropped the rear trailing arms down to look at the bushes and, to be fair, they're okay and don't need changing yet. Much is said about solid bushes but a lot of the time the rave reviews come from those who are replacing knackered bushes where just a new set of standard ones would have been an improvement. So these have been left for now. At the front, though, the front wishbone rear bushes really were goosed and in dire need of replacement. Rather than replace like with like, we opted here for E30 M3 eccentric bushes. Unlike the slotted standard ones that allow some movement, the M3 ones are solid and allow very little movement at all – ideal when you're braking and turning-in at the same time as there is virtually no geometry change. The eccentric bit means that with the bushes fitted correctly the rear wishbone pin is moved outwards by around an inch. This means the wishbone pivots around the inner balljoint and the outer balljoint is moved forward slightly. This increases the wheelbase slightly as well as increasing the caster angle and it adds real feel to the steering. It's a superb and inexpensive mod for any standard E30 or E36 and ours were supplied by BMW dealer Sytner in Sheffield (0114 270 2236), whose superb and



knowledgeable parts department also supplied me with some engine mounts – more on those in a minute.

Going back to the eccentric bushes, these must be fitted correctly or you'll be in trouble. There is an arrow on the bush that must be aligned with a lug on the steel 'lollipop' housing and when the bush is refitted, the recesses in the bracket must face upwards to accept the locating dowels in the chassis leg. Fitting the bushes was hard work. The old ones were drilled and cut off, the outer sleeve cut with a hacksaw to release its superhuman grip on the bracket and the bracket cleaned up. To fit the new bush, check and check again that you're fitting it the right way because once it's fitted, there's no going back. You can use a bench vice but Gary Cooke at Parkside Garage (01909 506555) showed me a much better way involving an anvil, a heavy steel round disc just bigger in diameter than the bush and a very big heavy hammer: three good welts and it was in.

To fit the bush to the wishbone is an art form. Only use washing up liquid to lubricate the bore of the bush and the end of the wishbone, and use all your might to push down and twist it on. Forget using hammers or mallets. It is a real cow and good luck doing it on the car – it's possible

but hard work. Don't use oil as a lubricant as it won't dry out and the bush can move on the wishbone.

As well as replacing these rear bushes, I elected to also replace the outer balljoints. The E36 uses a rubber-sleeved balljoint that is meant to damp out road noise but we don't care about that and replaced them with the Meyle heavy duty all-steel items. These are hard to find now but are sold by Motormec on eBay for around £25 a pair. You need a special tool to pull the old balljoints out and there is no way around this, however you can just buy a pair of new E30 wishbones that already have all-steel outer joints fitted. Fit the M3 rear bushes and you're good to go.

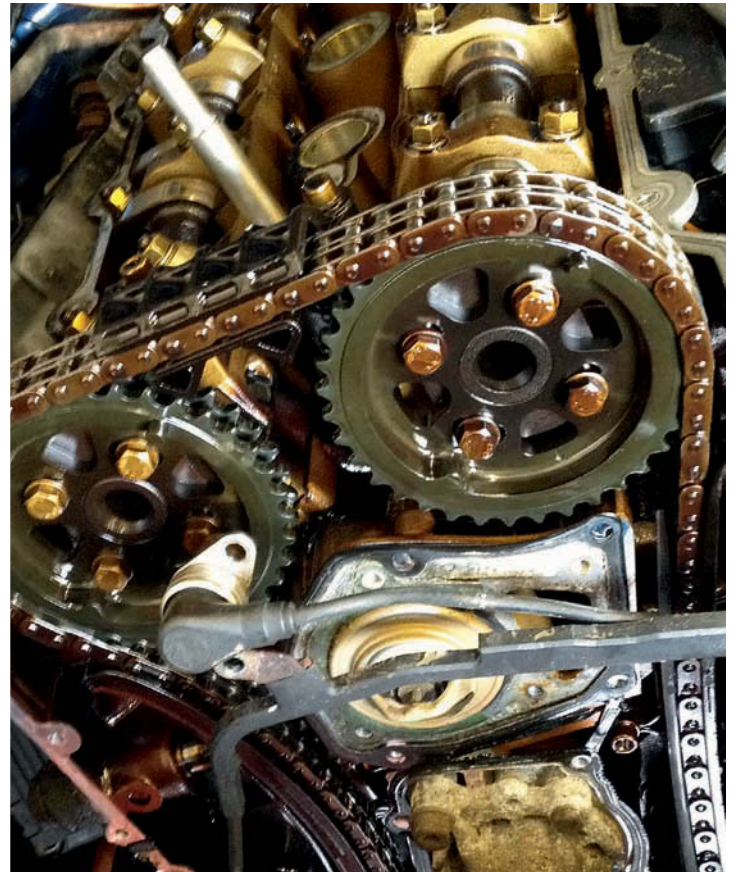
Engine mounts – these were the originals on our car and were way past their best. E36 mounts are hydraulic oil-filled units for refinement and when they're old, they collapse, often leaking the oil out and causing driveline vibrations. Rather than replace them with these again I've used E34 520i or 525i M50 mounts, again from Sytner in Sheffield. These are solid rubber mounts of the old style and are a straight swap for the E36 ones; it just requires two 17mm nuts and a bit of swearing; lift the engine one side at a time with a trolley jack and wangle them into



position. They work well and don't really cause any more vibration than the stock ones.

To complete the mechanical side of the build, I wanted to have a look at the timing chain. The replacement engine had well over 150,000 miles on it when it was plucked from an L-registered Coupé and whilst it sounded nice, I still wanted to be sure. I had a new Febi chain in a box so I decided to fit it. It took about three hours to do. The 22mm crank nut is undone by placing a long breaker bar on the bolt with the end resting on the passenger side front chassis rail and cranking on the key briefly. After two goes it went with an audible crack. From here it's a case of removing the cam cover, lining-up the cams and crank at TDC, taking the thermostat housing off followed by removing loads of 10mm bolts and the upper and lower timing covers. With the 19mm tensioner plunger removed the chain is slack but the inlet side cam sprocket needs to be removed. The chain can then be removed, the new one installed replacing the sprocket in a similar way in which it came off (I use Wurth green thread lock). Recheck the timing and then reassemble. In the event, the original chain was perfect but now we know all good. The



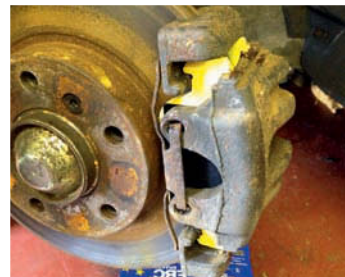


slightly leaky cam cover gasket was cleaned with brake cleaner and refitted with a thin bead of clear silicone sealer and the engine sounds just as crisp as it did before. The water pump looked old and grim so a new one was fitted for just £30.

Then we came to the spark plugs: The first three came out okay although number one was a little tight. Number four, though. Oh dear, this was very tight. It came undone a tad but no more. I was unsure whether to risk breaking it off in the head (requiring a head-off repair) or to just leave it in. The other three were very old and very grotty Champions. There was nothing for it but to go for it, so a load of WD40 was fired down the plug well and left for ten minutes. The plug was moved a tad, and back again. After a few goes it would move a quarter turn but I had to be careful. Before long it moved half a turn. Turning it back and forth with the WD40 in there helped it along and you can't imagine the relief when a fourth scabby Champion plug was released. The replacement NGKs went in a treat and the M42 unit is now ready for action.

Next time – seats, steering wheel, harnesses and getting the sounded deadening off the floor. What fun!

*Andy Everett*





# E88 125i Convertible

It's not too late to sort yourself out with some cheap summer fun and the ideal tool for the job is a six-pot 1 Series Convertible like this...

Words: Simon Holmes Photography: BMW



## History

The convertible version of the 1 Series arrived on the scene in 2008. There were five engines to choose from, ranging from four-pot diesels to twin-turbo straight-six petrol powered models and just below the most powerful was the 125i.

Despite the name, it was powered by a 3.0-litre straight-six shared with the 130i but detuned to create more of a gap between it and the range-topping 135i. Power was reduced to an ample 218hp, some 47hp down on the 130i, and torque was down to 199lb ft, although it was spread out nicely with the peak holding on from 2500rpm until 4250rpm. This equated to a 0-62mph time of 6.8 seconds and a top speed of 148mph.

The straight-six actually proved to be pretty frugal, too, with a 34.9mpg figure to match the

performance and 195g/km emissions. A six-speed manual gearbox was standard and an automatic transmission was an optional extra for £1500, which only really affected the 0-62mph time, by reducing it to 7.4 seconds.

Upon release, there was an SE or M Sport trim level to choose from. As standard, it came with 17-inch alloy wheels, air-con, rear parking sensors, rain sensors, heated mirrors, an On-Board Computer, leather sports steering wheel and all for the price of £26,455.

The M Sport package, for another £2000 or so, gained you 18-inch wheels shared with the 135i model, an M aero body kit, M Sport suspension and a matching M Sport steering wheel inside. Leather was an option, but a very popular one, as was sat

nav, cruise control, xenon headlights, front parking sensors, Bluetooth and DAB.

At the tail end of 2010, despite being relatively popular, the SE trim was terminated, leaving just the M Sport model available and it wasn't until 2012 that we saw another trim level added to the 125i line-up again. This time called the Sport Plus Edition, it ran alongside the M Sport and offered a similar package but with different 18-inch alloys and the addition of Bluetooth with USB interface, black leather trim with Royal Blue stitching, matching floor mats, unique door sill finishers, black mirror caps and slightly updated front and rear light clusters.

The model was phased out in 2013 to make way for its replacement, the 2 Series Convertible although that didn't appear until 2015.



## Why should you buy one?

If you're thinking of buying something to enjoy the summer sunshine in, then a small convertible such as the 1 Series is the ideal choice. It's easier to drive, lighter and more agile than a 3 Series convertible, so it's instantly fun to drive and practical to use. Couple that with the powerful but smooth six-pot engine and there's plenty of performance to enjoy as well. Now that the new 2 Series Convertible is out to replace it at last, prices for the first generation of small convertibles are beginning to fall, making it an ideal time to snap one up just in time for summer.





## Running costs

It's not a car that can be run on pennies but that goes with the territory for a 3.0-litre convertible, and things are pretty reasonable across the board. For a start, all 125i Convertibles fitted with either the automatic or manual transmissions cost a set £265 a year to tax, which isn't too bad for the performance. Average fuel consumption for either transmission is also around the 34mpg mark

according to BMW, although you would be hard pushed to see that on a regular basis without driving like a saint. An mpg figure in the very high 20s is more likely with a steady mix of driving thrown in. When it comes to maintenance, BMW main dealers charge £132 for an oil service while a full service (replacing the filters too) will cost you £411. Front brake pads work out at £199 fitted.



### E88 125i Convertible

**ENGINE:** Six-cylinder, petrol

**CAPACITY:** 2996cc

**MAX POWER:** 218hp

**MAX TORQUE:** 199lb ft

**0-62MPH:** 6.8 seconds (7.4)

**TOP SPEED:** 148mph (147)

**ECONOMY:** 34.0mpg (34.9)

**EMISSIONS:** 195g/km

*Figures in ( ) for automatic*

## What goes wrong?

The 1 Series on the whole is a very reliable all-rounder and fitted with the N52 six-pot it's verging on being bulletproof. Being a de-tuned engine it's very under-stressed, meaning it's generally very reliable. It's also more basic than the twin-turbo N54 and N55 engines fitted to the 135i so it doesn't suffer from the common High Pressure Fuel Pump or carbon build up issues associated with direct injection. The early N52 engines were known to suffer from excessive hydraulic valve noises but as all 1 Series Convertibles arrived in 2008 and the issue was addressed by BMW that same year, only the very earliest of cars are potentially affected.

Transmissions are also reliable, as are other drivetrain components, although manual gearboxes do benefit from an oil change to make them feel a little smoother, but make sure you use the correct BMW approved fluid.

Tyre wear can cause the car to feel a little odd, especially with the larger 18-inch M Sport wheels, so keep an eye on the condition of them and remember that replacing them is also expensive.

Inside, rattles are probably the biggest issue you'll encounter. The 1 Series cabin wasn't put together quite as well as you would have hoped and plenty of cars develop annoying squeaks and rattles. Common areas to look for these are the glovebox, centre armrest, rear-view mirror and A-pillar trims. There are also a few electrical issues to look out for and if the car is fitted with iDrive then the odd freezing issue can be problem, but the later systems from 2010 onwards were improved.

Finally, the roof mechanism itself is largely free from issues but make sure it all works properly, doesn't make any strange noises and isn't fraying anywhere. Also make sure it's not painfully slow, although it wasn't the fastest roof when new.



## How much to pay?

You can find early examples in decent condition for as little as £8000 now and the cheapest we found was a 2008 SE with 69,000 miles on the clock up for £7900 at a used car dealer. Usually, you will find the bulk of cars start appearing around the £9000 mark and rise from there. A low mileage, well-looked-after SE can be had for around £10,000, although M Sport models tend to fetch a little more. If you look around you can still buy a

high mileage M Sport for less than £10,000 but a really nice, low mileage minter will cost onwards of £12,000. The last of the line Sport Plus Edition cars all seem to have very low mileages on them and still fetch well over the £17,000 mark. A BMW Approved used example starts from £13,000 for a low mileage SE and £15,000 for a good condition M Sport, but you do get a full year's warranty for your extra money.

## Verdict

The baby BMW is the perfect platform in many ways. It shares its key underpinnings with the well-honed E9x 3 Series but in the smaller and lighter chassis it punches above its weight in terms of performance, ride and handling. The 125i is a sound choice as the six-pot delivers solid performance without the associated problems of the more complex 135i. That means you can enjoy the sporty nature of the car with the wind in your hair and very few issues to worry about. Although the 1 Series is getting on a bit now, it still looks relatively fresh-faced and modern. There are plenty about to choose from, too. Add all that together and you have the ideal summer fun formula and all for a reasonable price, to boot.





## Write and win with Meguiar's!

We've teamed up with those car cleaning wizards at Meguiar's to provide the winner of the best letter each month with a fabulous Meguiar's New Car Kit. This superb kit includes Ultimate Wash & Wax, Ultimate Wax, Endurance Tire gel, a Microfibre Wash Mitt, a Water Magnet and a Soft Foam Applicator pad worth £34.99!



## Colour blind?

As the new owner of an M235i auto in Melbourne red, I've got to ask, what exactly is BMW playing at with its current limited range of colour options?

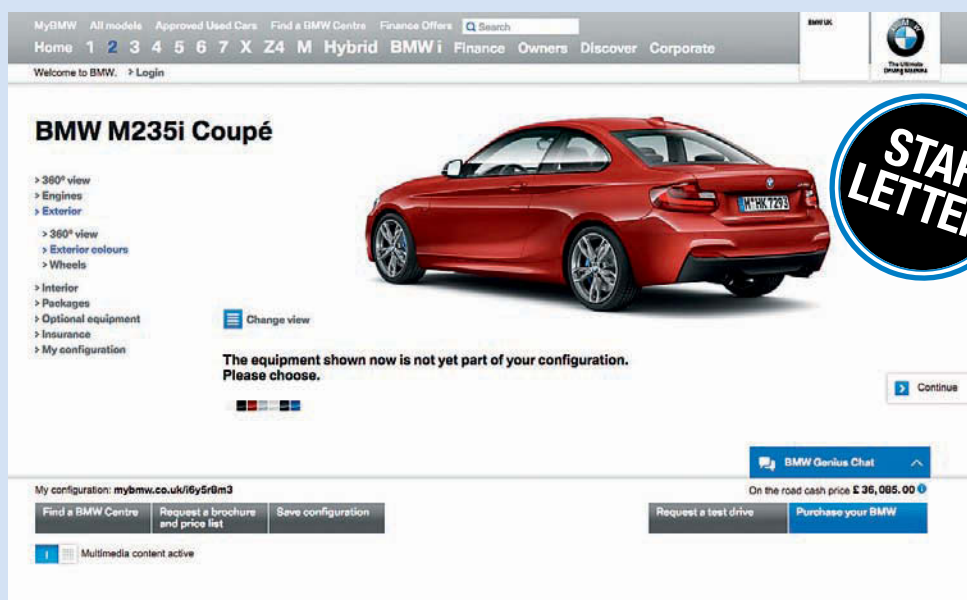
It's bad enough that my own car was only available in done-to-death white and I had to pay extra to choose the red, which is the best of the bad bunch in my opinion, when the other options were boring black, drab grey or Estoril blue, a shade that has been around since the 1990s, if I'm not mistaken.

Why can't BMW just give us a proper range of colours? I'd love to see a vibrant yellow like the one on the M4, or even a light silver would do. And then, to make matters worse, I hear that the forthcoming M2 will only be available in white, black and grey! This is a car I'd seriously considering purchasing but not if it only comes in those three colours!

On a side note, I love the M235i in every other way, I just wish it was a better colour!

**Dan Price**

*We have to agree with you here, the current palette of colours for some BMW models is frankly a little depressing. We've brought this up before when it comes to the i8, as despite its stunning looks its colour combinations are very limited. As*



*for the M2, its predecessor, the 1M, only came in three colours but there's still hope yet, as we spoke to a BMW UK representative who confirmed there will be between four and six base colours, including a white, black and grey but there will also*

*be a 'fun' colour, most likely a blue or green. Apparently BMW are also looking to introduce individual M colours at some point, which should include the M2 model, so there should be some choice. At least we hope there will be...*



## The M3 effect

I read your *Buying Guide* article on the M3 in the April issue of *BMW* a few weeks ago and I felt I just had to send you a 'thank you' note. The article was written so well, with so much passion, I bought the magazine and keep it turned to that page so everyone who pops into my place can have a look. Everyone who reads it has this look in their eyes, where they remember what memories they had when the car first came out, and what it did to them.

Writers with so much passion about a brand, about a car, are few to find. I'm one who still struggles to adjust to the new turbo engines and reading about the naturally aspirated V8 made me feel warm and fuzzy. And I found a neat M3 Convertible in Durban. Fingers crossed I'll be in it soon.

**Bentley Mtafu, South Africa**

*Thanks for the kind words, it's nice to hear the feature came across as it was intended. The E9x M3 will undoubtedly go down in the BMW history books as one of the last of the naturally aspirated greats. Whilst the current range of turbo cars are amazingly potent, there seem to be plenty of enthusiasts, such as yourself, who don't feel quite the same way about them.*



## Business sense

I enjoyed reading through the article *Business Class* in the June issue of *BMW Car*. It makes sense to consider the alternative of buying nearly new, either to save costs or to get a better car for your money. I have bought BMWs new and used and personally I see nearly new as a good way to get higher specification without the high cost of adding options.

Three years back I was looking to buy a new BMW after running an E91 330d Touring for over six years from new. I'm now a relatively low mileage user in my own car, at about 8000 miles a year. The front runner was an F31 328i, but when optioned to my preferred specification, it was cost heavy in my opinion, far too much for a four-cylinder BMW. I'd previously looked at the 5 Series Touring and had thought about either a 530d or 535i. Both cars bought new would be silly running costs per mile, for 8000 miles a year.

I sourced an ex-BMW HQ F11 535i M Sport Touring with less than 6000 miles on the clock. A genuine HQ example, priced very keenly indeed; specification took it to almost £60,000 list price, bought for less than I would have paid for a new F31 328i with limited options. Having the N55 engine is rewarding in itself, let alone Adaptive Drive, Head-Up Display, surround view/reversing cameras and panoramic roof, which are not the norm. Plus it had all the more common options like Adaptive Headlights, Professional sat nav, Sport auto transmission, Comfort Access, upgraded sound, etc, which take the Five to another level.

With mpg shortfall now being a factor to calculate into real world running costs, something like the 535i makes even more sense than first imagined. I found this the same when running an E39 540i Touring. Official figures for mpg are never in favour of the bigger petrol models, compared to diesels. In my driving conditions, even the anomalies of mpg shortfall work to my advantage, the 535i returning over 30mpg long term.



One factor I include in my calculations is extending the warranty after the three-year period and I keep as near as I can to the original warranty protection for peace of mind. Even allowing £770 for the year, including emergency cover, the nearly new car still makes more sense than buying new.

Looking to nearly new can definitely be a way to drive a better car without a cost penalty. It will not suit everyone, though, particularly now that BMW allow such huge discounts on new cars. But that's another subject with different implications...

I have been delighted with the 535i – it's a superb car. It really impresses with how it drives and with all the technology. Adaptive Drive is the star, no doubt in my mind, again a subject of another discussion.

I ran my E39 540i for over four years; what a machine. It left me with many good memories and set the bar very high indeed. The E39 was a benchmark in how a BMW could be a true blend of luxury, performance and driver satisfaction. I never

thought the F11 would reach the bar already set but I'm pleased to say (after owning it for over two years) I'm not in any way disappointed; it's a different car but equally as good... in some ways even better. Thanks for running the article; I enjoy the magazine each month.

Peter Flux

*We're glad to hear the article made sense Peter. Plenty of owners can perhaps get a little hung up on driving the very latest model without taking into account what else they could get for their money. Your case study is the perfect example, as going up a model has given you so much more in return and when the amount of miles and the costs involved are taken into account, it actually makes more sense when you consider the overall picture. Perhaps we should do a more regular comparison of what you can get for your money between models...*

## Classic gold

I really enjoy your pieces on the older BMW models, particularly the less popular ones, namely anything that's not an M car! I don't mean that in a bad way, I like those, too, but I do like to see the more run-of-the-mill classic BMWs of the past. Why don't you do more on these? Is it simply a case of lack of cars?

I notice you do very little on one of my favourites, the E12. I had one some years ago. It was only a basic 518 but I've liked them ever since and would love to see something about them in the magazine at some point.

Greg Moss

*Indeed, we would like to do more on certain models but as you've already highlighted, the key issue is finding them! We always prefer to photograph the cars ourselves and, if possible, experience them. So for classic features we either borrow cars from kind owners or classic car dealers who let us know if they have something of interest in. We'll do our best to feature more E12s and 'run-of-the-mill' BMW classics in the future!*



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# BMW Buyer

Our monthly look at what's hot, or not, in the BMW marketplace

Words: Guy Baker



The UK new car market remains buoyant delivering the 38th consecutive month of growth in April. Registrations rose by 5.1 per cent to 185,778 units according to the Society of Motor Manufacturers and Traders – the best April since 2005; while year-to-date for 2015 registrations are up to 920,366 marking a 12-year high for consumer confidence.

BMW UK's market share is up 5.15 per cent on 2014, but compared to Mercedes (whose market share is up 18.47 per cent on 2014) there is still some room for improvement. That said, key rival Audi has seen their year-to-date sales rise by just 2.57 per cent so BMW won't be too disappointed.

In terms of the used car market BMW group buyers still seem active: "During the first three weeks of April auction activity was good with a positive physical presence and plenty of activity online," reports Rupert Pontin, head of valuations at Glass's. "However, following a similar pattern to last year,

conversion softened for the final week of April in the run-up to May registrations," Rupert points out. "But BMW retail dealers remain buoyant with April used demand strong, and specialist BMW car supermarkets and smaller dealers also appear to be performing well." The top three best-selling model ranges in the action halls were 3 Series, 1 Series and 5 Series.

Franchised dealerships are keen to push 1 Series five-door hatches at the moment with the 118i M Sport available on BMW Select Finance for just £269 a month over four years. Put down £3599 at 5.9 per cent APR and BMW will put down £836.07 towards your deposit. Alternatively you could put down just £2000 to get a three door for £302.29 a month.

Outside the main dealer network there are some attractive deals on many BMWs, especially 5 Series. Online discounter, [www.autoebid.com](http://www.autoebid.com), is offering savings of up to £6857 on 525d SE Steptronic autos, and as much as £7352 off an equivalent new 530d M Sport ●

## Top three £15,000 Diesel Saloons

Despite the recent clamour for crossovers, as an all-rounder a diesel BMW saloon still takes some beating. And with so many different models released over the last ten years or so buyers really are spoilt for choice. Here are three of our favourite £15,000 options.



320d Efficient Dynamics (F30)  
(2012-on)

£15,000 is enough to put you behind the wheel of a current 3 Series in 320d EfficientDynamics guise, with around 40,000 miles on the clock. That super-efficient engine can deliver over 65mpg on longer journeys and road tax is a miserly £20 a year. And the styling is spot on too.



520d SE (E60)  
(2007 to 2010)

A rather svelte 55,000-mile E60 520d could be yours for just £15,000, with the last of the E60s boasting more power and plenty of torque. CO<sub>2</sub> emissions of just 137g/km equate to a very reasonable £130 annual road tax bill and even SE models can be found well spec'd.



535d M Sport (E60)  
(2007 to 2010)

A genuine wolf in sheep's clothing, the E60 535d M Sport Saloon blends serious performance with a top-of-range luxury spec. A one-owner 60k-miler is just £15,000 and for those who feel that way inclined, the tuning potential is substantial, but you'll only pay £225 a year to tax it.

Many thanks to John Warren Cars ([www.independentbmw.co.uk](http://www.independentbmw.co.uk)) for its assistance with BMW Buyer



THIS  
MONTH'S  
BEST BUY!

## BMW 530d Saloon (E60) (2007 to 2010)

Many 5 Series buyers now seem to be focused on F10 models, leaving less sought-after E60 models to gently fall in value. Yet the face-lifted more efficient E60 530d is a cracking saloon, especially in M Sport guise. Often overlooked by the 535d, it boasts ample performance – with 231hp and 369lb ft of torque – yet combined fuel consumption betters 44mpg. Road tax is a very reasonable £205 a year and if you wanted to boost performance even further, a remap will see your 530d pumping out 275hp and a whopping 428lb ft of torque. Prices start at just £7000.



## AUCTION SPOTLIGHT

BMW Car's lowdown on the latest prices paid for average condition BMWs at auction. To find your nearest auction house check out: [www.british-car-auctions.co.uk](http://www.british-car-auctions.co.uk)



### And remember...

Always arrive early at car auctions, pick up the sales catalogue and examine the vehicles in the line-up before the bidding starts. In addition to the hammer price, you'll have to pay a small buyer's fee. You'll need to provide a deposit of at least £500 (in cash or by Maestro or Visa Delta debit card) but the balance of the purchase price and the buyer's fee can be paid via banker's draft, cash, cheque, telegraphic transfers, credit or debit card.

## Prices paid last month for average condition BMWs at auction

Model	Trim/transmission	Year/registration	Mileage	Price
316ti SE	Compact, manual	2002/52	94k	£1100
330i	SE Saloon, auto	2002/02	117k	£1500
318i	Sport Touring, auto	2004/54	79k	£3000
840Ci	Sport, auto	1998/5	132k	£4100
Z4 3.0i	SE, manual	2004/04	74k	£4450
330Ci	Sport, manual	2005/05	65k	£5250
123d	M Sport Coupé, manual	2008/08	108k	£6900
318d	ES Touring, manual	2011/11	68k	£8414
645Ci	Coupé, auto	2004/04	38k	£8700
116d	Efficient Dynamics, manual	2013/62	19k	£12,050
335i	M Sport Coupé, manual	2008/08	56k	£12,500
320d	M Sport Convertible, auto	2010/10	53k	£13,350
635d	M Sport Convertible, auto	2008/08	75k	£14,900
X5 30d	SE, auto	2010/60	71k	£18,050
640d	Gran Coupé M Sport, auto	2013/13	25k	£34,000

*Prices quoted are hammer prices and will be subject to buyer's premium*

## Forecourt find OIL THE WHEELS

With superb handling and performance, the diminutive 135i M Sport Coupé is serious fun, as well as being very well equipped. Featuring M Sport double-spoke 18-inch wheels as standard, plus sports suspension and seating, the 135i Coupé also comes with hill start assist, brake drying and brake fade compensation, M Sport aerodynamic packaging, automatic wipers and lights, and electric heated memory driver's seat.

We spotted this rare white high-mileage manual example for sale at specialist West Country Cars of Yeovil for just £10,990. The catch? There isn't one. It even packs a full dealer service history.

Web: [www.westcountrycarsyeovil.co.uk](http://www.westcountrycarsyeovil.co.uk)  
Tel: 01935 863538 or 07860 710219









## Our tame BMW technical expert, Andrew Everett, has a look at some common BMW problems

### No more heroes

Looking on the website [howmanyleft.co.uk](http://howmanyleft.co.uk) reveals that I have a very rare car, it seems. I've owned my 1989 E32 730i (five-speed manual) for around 12 years now and according to the website there are only four 1989 manual transmission versions on the radar, all of which are on SORN (as mine is too). But I went through the rest of the E32 range and it makes sorry reading. There are just 22 750iLs of any age sporting tax discs. There are only five 735iL cars. And what about the once common 735i Auto? There are now less than 150 of them that are taxed and on the road. Totting up, there are less than 1000 E32s now left on the road in the UK.

Thinking about it, I cannot recall the last time I saw one on the road, or even in a breakers. In Germany, as in the UK, they are all but extinct – and yet there are over 1000 1968-1970 Morris Minors still taxed. Work that one out.

The E32, as one Dingolfing factory manager told me, was one of BMW's landmark cars. It was the car that finally outdid Mercedes, as it became the big executive car to have and it sold strongly in the UK. Yet like no other model they just seem to have all vanished! On my 2009 trip to the Dingolfing factory on my car's 20th birthday, we travelled from Sheffield to Munich and back and didn't see another E32. Mine certainly attracts attention when it's out and about. Although it's now a very rare car, values are still low and I can't see Dan at Munich Legends placing any wanted adverts in the broadsheets any time soon.



### Paint it Topaz

A mate of mine has a very nice Topaz blue 318Ci Coupé on a W plate, the one with the proper M43 engine. Some clown clobbered the passenger door mirror, damaging it beyond repair so we found a very good used mirror on eBay for £50. The only problem was it was silver. Rather than paying a bodyshop to paint it, we decided to do it ourselves. However, unbeknown to me, my friend ordered the paint from BMW. The first shock was the price: £25 for a small aerosol can of paint and some lacquer? Oh well, he's paid for it now. Giving both cans a good shake, the base coat went on okay after rubbing down with a red scotchpad and careful masking. But I've always found that the clear lacquer with these spray sets is really blotchy and testing this one on the old mirror proved that. Halfords lacquer? Lovely stuff but spray it on top of BMW aerosol base coat and it reacts and crazes. I didn't rate the finish of the BMW Topaz blue that highly, so I rubbed it all off and went down to Halfords for its own Topaz blue. It went on a treat. After two good coats, I left it for an hour and then wet flatted it with 1000-grit wet and dry. I dried it completely and then applied three thin coats of Halfords lacquer. We left it for a few days to dry before polishing it with 2500 grit and then T-Cut. The end result is tremendous and both cans were about £15.

### NOx sensors

I was reminded the other day about the sensor that screws into the exhaust after the front catalytic converter. NOx sensors are used in the battle against emissions and are yet another thing to go wrong.

Introduced with the N43 engine back in 2007, along with high pressure direct fuel injection, NOx sensors (not to be confused with knock sensors) are now at the age where they are going wrong. As well as the NOx sensor you also have a regulating lambda probe, a lambda monitor sensor and an exhaust temperature sensor — four sensors fitted to the same section of exhaust! From BMW the NOx sensor is an eye-watering £370 plus VAT and after a search on the internet, it doesn't appear that you can buy them anywhere else and apparently not direct from NGK who make a whole range of them. So, when the EML light flashes on, assume the worst and hope for the best!

Whilst it's possibly a good thing for the environment, all of this technology isn't so great for your wallet. From my time at a dealership when I had an N43-powered 116i 2.0 company car, I can still recall that when driven with the utmost care, you could eke 40mpg from it. Drive it with any spirit, though, and you'd get that down to 31 or 32mpg in no time — very similar fuel economy to a 1992 M42-powered E36 318iS then. No Vanos, just one lambda probe and one cam sensor plus a lot more verve. Not BMW's fault, of course, as this nonsense is foisted on everyone now in the name of progress.





## E46 door lock repair

One of the issues with the good old E46 3 Series is that the bit you put the key into on the driver's door lock assembly can break. If your remote locking works okay it's not a problem, and given how easy it is to remove the complete lock barrel from the door (just a single allen bolt is required) it's worth removing it once a year and giving it a good dose of WD40 and spray grease. However, if your lock does break (you'll know as the key does nothing at all when inserted into the lock) then you need to either fit a repair kit or replace the whole lock with a new one. From BMW, a new lock to suit the car's original key is just under £100 with VAT. A good used lock assembly with another key is around £25. A repair kit with all the bits of cast metal is anywhere from £5 to £20 and requires both infinite patience, a steady nerve and a good range of expletives – it's really not a nice job. Whichever way you go, just remember that E46 door locks changed in October 2000 (or X registration). On older ones, the plastic cover on the lock is smooth where the door handle sits and on later ones it's recessed and the locks cannot be interchanged. One of the discs inside the lock is different, too, but the repair kits supply both types.



## E36 now listed with BMW Classic

You just know your BMW is old when it is relegated to being catered for by BMW Classic and the the 'archive' section on the BMW parts section as well as on the BMW parts website RealOEM.com. The thing is, E36 production started 25 years ago this October when the first LHD 325i Saloons went down the line at Munich, followed by the 320i in December and the 318i and 316i saloons in January and February 1991 respectively.

At present I'm doing a load of work on a February 1991 318i with all-grey bumpers and black mirrors. It too will be a quarter of a century old in just a few months. It really does need a new steering wheel as the plastic rim is worn smooth to a shine. That once modern-looking four-spoke non airbag job is still available from BMW but, at a Pebble Beach-like £285 plus VAT (seriously!) I have a sneaking suspicion that BMW's remaining stock will not be depleted any time soon.

## E60 520i driveshafts

Now that the E60 is starting to get on a bit, with the oldest ones now 12 years old, some bits are starting to wear out due to high mileages, as you'd expect. That's not so bad but there is one case where a seemingly simple fault can cost a fortune to fix. For some reason, the E60 520i petrol has different driveshafts to the rest of the range. I'll never understand why a manufacturer does this; just have one differential across the range with varying ratios, one set of driveshafts and be done with it! If you just standardise the strongest kind they'll rarely go wrong.

Anyway, the 520i can wear out CV joints leading to the familiar clonking sound from the rear under power on/power off. Think you can get a good used one? Good luck with that. New aftermarket or reconditioned ones? Nobody does them. New from BMW? No problem – just £1200 plus VAT for the pair. So, if you're going to buy one of these cars, you need to test it thoroughly and listen for the noise. If you have clonking CV joints, there is an escape route and that is to pack them with CV grease. It's generally the inner ones that wear first so unbolt them from the diff, drill a hole in the steel end cover just big enough to screw a grease nipple in, and pump a load of CV grease into the unit before plugging the hole again. It works on E46 shafts (I did it on my 323Ci) and whilst it won't cure the wear, it will cushion the internals of the joint and reduce/eliminate the noise. Don't overdo it, though, as too much grease will just blow a big split in the rubber gaiter.





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## BW Chiptune 320d ECU replacement offer

Whilst the ECUs on E46 320ds almost never went wrong, the E90 320d ones most certainly do. Located under the bonnet in the plastic E-box, you'd think they would remain bone dry in there... but they don't. Water damage is the most common problem with these and the water gets into the E-box from underneath and just stays in there until its work is done. BMW want around £1200 for a new one plus fitting and coding – not funny on a car worth £4k.

However, better news is at hand as Jason at BW Chiptune is doing a special offer for *BMW Car* readers, as he explains: "We normally charge £595 plus VAT for an exchange reconditioned unit but bring this issue of *BMW Car* mag with you and we'll fit and code it for you as well. Get your car recovered here before 12 and we'll have it up and running again by 5pm so you can drive it away."

BW will also perform the standard modification to the E-box as well, namely drilling a couple of extra drain holes in the base so water can drain away. It's the big plastic box at the back of the engine bay and you can remove the lid yourself and have a look in there. Even if it's dry it's worth lifting the ECUs out (do not disconnect them though!), drilling a couple of 4mm holes in the base and refitting everything. If you do find some water there and it hasn't got to the ECU yet, you've had a close shave!

## Anschler E90 dampers

The E90 3 Series is ten years old now, and Euro Car Parts (ECP) is now stocking a range of Anschler budget dampers (often wrongly called shock absorbers) for these cars. Original equipment units are anything from £100-£200 quid each but the Anschler ones are a mere £35.89 with VAT although, at the time of writing, they'd run clean out of stock. They should be back on the shelves by the time you read this though. An uprated version is also available for just £60.42, not quite so tempting when ECP also list a Sachs unit for £78.

Despite being the budget brand, I have found Anschler stuff to be perfectly okay and I've yet to hear of any adverse reports of their products despite them being on the market for a good few years. Stuff like this really does keep the cost of motoring down; like budget brakes and tyres, the days of the real rubbish is fading fast.



## Classics under the hammer

Sometimes we're amazed at the prices that are being asked for classics at some of the specialist dealers – both here and abroad – and it's also interesting to note how some machines attract much higher prices in one market than they do in another. But the one sure-fire way to note how much cars are really worth on the open market is to attend a classic auction. Here's what's been going on over the last couple months...

Coys's annual sale at Techno Classica always has some mouth-watering machinery up for grabs and this year was no exception with two BMWs – a 328 Roadster and an M1 – bringing in big money. The 328 on offer was discovered as a project in Germany around a decade ago and was restored in the UK by TT Workshops and Bristol Engineering. It carried a pre-auction estimate of €480,000 to €600,000 and sold for €556,170. The M1 had spent much of its life in a private collection which accounted for its 1650km total mileage. Despite being fitted with the wrong wheels it carried a €275,000 to €350,000 estimate but sold for a staggering €461,765! The market for these machines is very strong at the moment – a far cry from 15 years ago when they could be picked up for less than £50k!

Closer to home E30 M3s always attract a lot of attention when they go under the hammer but it would appear that it's only the really good ones that sell for big money – witness an Evo II that sold at Race Retro for nigh-on £50,000. E9 CSLs are another model that seems to generate plenty of interest and H&H recently sold one for £19,600 which doesn't sound like a huge amount until you read the lot description that showed it had been laid up since 1999, had been reshelled in the past (possibly with a CSA body) and had an incorrect 3.2-litre engine fitted.

E24 values seem to be climbing slightly, too, and Classic Car auctions recently sold two examples, both Highlines, with excellent potential for £6500 and £7200. We're expecting these to be one of the next models to rise pretty rapidly as numbers dwindle.



# Next Month

30 Jahre M5 on test

## Plus

- Alpina D4 Convertible • M Performance 335i Touring
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August 2015 issue available to download 13 July and in the shops 16 July

(Contents subject to change)



## BMW CONCEPTS: The cars they could have made

# Z29

**BMW's first attempt at a lightweight sports car built entirely from carbon fibre and aluminium wasn't the prettiest of things, but it did what it was supposed to...**



In the late 1990s, BMW was riding high from its success in just about every sector it dipped its toe into. But rather than rest on its laurels, future development was crucial to stay ahead and BMW was looking forwards. It meant thinking outside of the box a little, not just in terms of technology, design and innovation, but construction and materials, too.

That's where the Z29 concept entered in 2001. The project's focus was to explore the use and practical feasibility of introducing lightweight exotic materials to car construction. Designed to be very light, the Z29 featured a central tub which housed the two occupants and was made from plastic reinforced carbon fibre. Front and rear subframe sections made from aluminium were then attached either end to support the running gear, drivetrain and suspension.

The body panels, also made from carbon fibre, were then attached to form the shape and were not-structural, although the Z29 wasn't exactly what you would call pretty. The primitive shapes and lines indicate BMW's designers may well have been finding their way working with the foreign material, hence the basic design, although the scissor doors added some extravagant style. Inside was a similar affair and things were kept relatively plain and simple, although the actual design of the dashboard wasn't very BMW, aside from the cluster cowl. However, strangely, the dash design did share more than a passing resemblance with the dash found on the first generation of Audi TT...

Aside from the design, the plan to keep weight down worked and the car was indeed light. Total

**The Z29 originated in 2001 but BMW didn't actually allow anyone outside the company to see the car until 2010!**



weight was said to be around 1600kg; a relative featherweight for the time and to make the most of that crucial weight saving, power was provided by the S54 straight-six borrowed from the E46 M3 and Z3M. Output was around 340hp and it was coupled to BMW's SMG II transmission, rather than a manual gearbox. This combination produced potent performance and 62mph from rest was quoted as a lightening 4.4 seconds.

Of course, the Z29 didn't progress too much further than a single working prototype, but that's not to say the project wasn't a success or that its spirit didn't live on. As a general design and idea, the Z29

doesn't look too far removed from a Z4M that arrived a few years later, complete with the same engine and running gear.

But the bigger picture was that the car's construction appeared to serve as a successful stepping-stone for BMW's future. It seems like no coincidence that it began introducing mass-produced carbon fibre to production cars not long after the Z29 experiment took place in the form of the M3 CSL's roof panel. And look where that has evolved since then, as BMW now builds entire production cars in a very similar way to how the Z29 was designed and built in the i3 and i8. How's that for success? ●





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